

MARCH 1953

MATERIAL FLOW

HANDLING • PRODUCTION • PACKAGING AND SHIPPING

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PACKAGING
and
SHIPPING

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FLOW BASIC
FLOW QUARTERLY

130,000 Plant Coverage

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**PROTECT
WORKERS**
*on Racks, Ladders,
Scaffolds, Platforms*

2

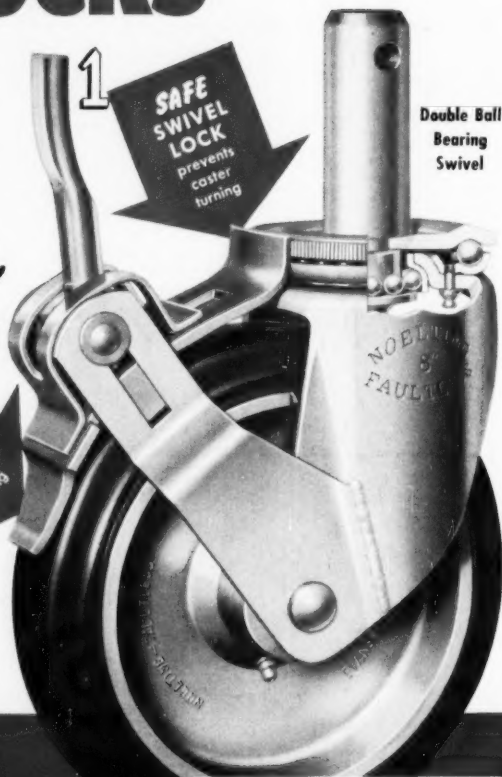
**SAFE
WHEEL
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prevents
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**F900 SERIES CASTER
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LOCKING BRAKE**
available with
5" and 8" wheels

1

**SAFE
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Faultless

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THAT CUTS COSTS FOR INDUSTRY



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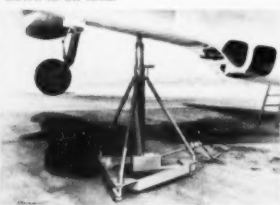
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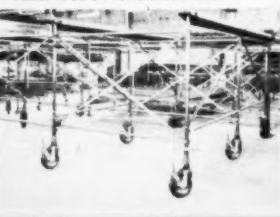
FAULTLESS CASTER CORPORATION EVANSVILLE 7, IND., U. S. A.

Branches in Atlanta, Boston, Chicago, Cleveland, Dallas, Detroit, Grand Rapids, High Point, Houston, Indianapolis, Los Angeles, New York, St. Louis, Canadian Factory: Stratford, Ontario.

'SAFETY FIRST' for workmen, Faultless double locking brakes securely hold mobile scaffold. Raise lever to lock—press down to un-lock.



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A NEW LINE OF Automatic Skylift Trucks

AT NEW LOW PRICES

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FEATURES**

Capacities
1000 to
4000
pounds



*Monolift Model

FEATURE	BENEFIT	TRUCK			AUTO- MATIC
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Patented dual lift rams with leakage return	Exclusive! Protects ram plunger from dirt, damage	—	—	—	✓
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Built for Trouble-Free, Heavy-Duty Service

These rugged, new "Standard" Skylifts... built to give long, repair-free service, maximum maneuverability and smooth, fast, dependable operation... are equalled by no other truck for quality, price and performance.

Before you buy any lift truck, get the complete money-saving facts on the amazing materials handling savings these new Automatic "Standard" Skylifts will bring to *your business!* 2000 lb. model only **\$3575⁰⁰*** F.O.B. Chicago

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By..... Title.....

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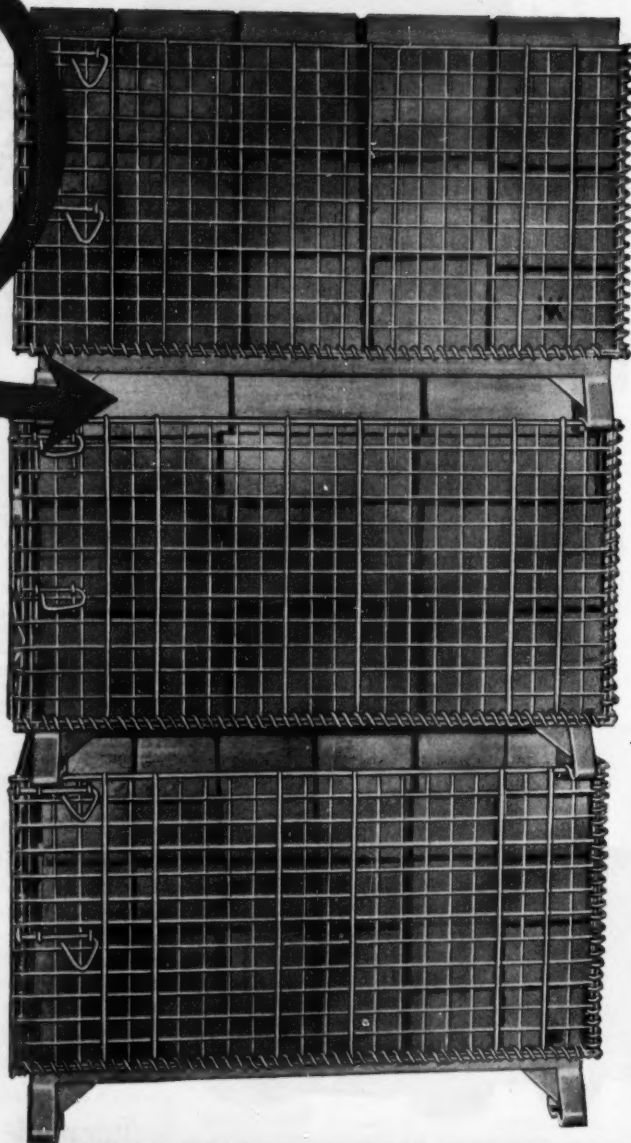
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Here's the new
CARGOTAINER you
can load high and
still stack!

One of the most interesting features of the new *Clearview* Cargotainer is the fact that the improved base construction permits loading above the top wire. You can load it high and still stack it safely for storage. No other open-mesh, folding-type container for storage, shipment and assembly-line operation possesses that advantage, plus the others shown below.

1. **No center legs.** All types of moving equipment may now be used.
2. **Highly shock resistant.** New corner design resists an unusual amount of shock . . . permits heavier loads.
3. **Better for stacking.** New corner design permits easier and more secure stacking.
4. **Space saving.** Five folded Cargotainers now occupy the space of one unfolded.
5. **Positive locking.** Assured by new rugged, easily operated sliding locks.

The new *Clearview* Cargotainer will stack interchangeably with the standard model which will continue to be available for lighter applications. For full information and prices, write Dept. FL, Pittsburgh Steel Products Company, Grant Building, Pittsburgh 30, Pa.



CARGOTAINERS

by Pittsburgh Steel Products Company

A Subsidiary of **Pittsburgh Steel Company**

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FLOW Magazine is affiliated with the Industrial Publishing Company which also publishes:

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MATERIAL FLOW

MARCH, 1953
VOLUME 8, NO. 6

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FLOW is indexed regularly by Engineering Index, Inc.

SUBSCRIPTION RATES

United States and possessions—\$3.00 per year, \$5.00 for 2 years. Subscriptions in the United Kingdom: £1.10 per annum, payable in Sterling to our London Office.
Canada—\$4.00 per year, \$6.00 for 2 years.
Foreign—\$5.00 per year.
Single copy price—30 cents.

Published Monthly

"Acceptance under section 34.64 P. L. & R. authorized at Pontiac, Illinois."
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5TH NATIONAL MATERIALS HANDLING EXPOSITION

See the largest and most comprehensive array of materials handling equipment ever assembled in one place and at one time! More than 250 companies will present and demonstrate six acres of machines, supplies and services that are today's pacemakers for cost reduction and operating efficiency.

Top experts will examine new developments in materials handling techniques at conference sessions concurrent with the show.

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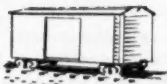
ELWELL-PARKER!

Here is a typical example of the big economies made by this E-P fork truck at the warehouse of a large grocery chain:

Roof-high tiering insures maximum use of every square foot of space . . . Fume-free electric power is ideal for food handling . . . This truck has needed only \$62 worth of replacement parts during 2 years of steady use.

THE JOB...

Moving 2000 Cases of food from
BOXCAR to storage in WAREHOUSE



PREVIOUSLY DONE BY...

8 MEN using 4-wheel TRUCKS



TOTAL MAN-HOURS REQUIRED 20


NOW DONE BY...

E-P TRUCK and 2 MEN



TOTAL MAN-HOURS REQUIRED 8

SAVINGS...12 Man-Hours or 60%

Elwell-Parker trucks have developed notable *savings* in over 300 branches of industry during the past 44 years. To help you profit by this *unexcelled* materials handling experience, your near-by  man is at your service. The Elwell-Parker Electric Co., 4233 St. Clair Avenue, Cleveland 3, Ohio.



NEW, ILLUSTRATED CATALOG describes all types of E-P trucks. Write for this catalog and name your product.

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**This Picture
IS WORTH
1000 WORDS!**

Show



to Your Drivers

WHEN IT COMES TO TRAINING industrial truck operators, one picture is worth a thousand words. Clark's new "Safety Saves" movie is the only driver safety-training film in the materials handling field. It's a 30 minute sound movie, filmed entirely "on-the-job", and it's available to you on a loan basis.



1. "It's fun to watch the scenery; it's safer to watch the road."

2. "All right then... you won't make that mistake again!"

You (and your drivers) will see hair-raising examples of how not to handle a fork truck, as demonstrated by Willie the Cowboy.

After you've seen Willie's way, you'll see the safe, correct way to drive and take care of a truck. To help cut accidents and improve driver performance, all your drivers should see "Safety Saves". Use the coupon to indicate when you want it—the only cost to you is return postage.

**CLARK ELECTRIC AND
GAS POWERED
FORK TRUCKS**

AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIVISION
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Send "Safety Saves": Date wanted _____
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Name _____
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City _____ Zone _____ State _____

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LETTERS to the editors

Pros And Cons Of Oblique Stacking

To FLOW:

We receive FLOW regularly and have found many useful ideas in it. In a recent issue, however, there are two drawings which I do not comprehend.

The caption states that pallets should be stacked at an angle to the aisle in order to save space. The drawings, on the other hand, show that more pallets can be stacked at right angles in the same amount of floor space.

Oblique stacking does have many advantages, but I don't believe that it saves space as the article states.

G. M. Burgess

The Advance Furness Co.

The question of oblique stacking has been argued pro and con for a good many years. Its use is not justified in every instance, and should certainly not be contemplated without complete study by a competent engineer.

In instances where it does apply, the space saved is in the aisle width. Oblique stacking permits fork trucks to pick up and stack loads without making a full 90° turn, thus requiring narrower aisles.

The aisle width, rather than the actual space consumed by the pallets, is the area in which space is to be saved.

One For The Scientists

To FLOW:

One of our European clients has a problem in conveying lead oxide and has requested that we look into the situation for them. They wish to convey lead oxide from 30 to 150 feet in straight horizontal runs.

The maximum rate is 10 cubic feet

per hour, the weight as being fed on the conveyor being 120 to 160 pounds per cubic foot. The lead oxide has a specific gravity of 9 and has a tendency to pack when standing.

The particles of lead oxide range from 0.001 to 0.14 millimeters and are chemically known as Pb or Pb₃; PbO or PbO₂ or mixtures of either. The maximum moisture content is nil, but the powder readily absorbs moisture when in contact with air.

The temperature of the powder during conveying varies between 75° C. and 1500° C.

We should appreciate any suggestions that you might have on handling this material as well as the names of companies who might be in a position to assist us.

D. T. Miller

Mead Carney & Company, Inc.

We have advised reader Miller to contact the manufacturer of a conveyor which has a belt that zips up along the edges. The belt, in effect, becomes a tube until it is automatically unzipped for discharge of the material being conveyed.

This type of installation is ideal for materials which might spill easily, which oxidize rapidly, or which are too heavy to be handled by a pneumatic tube.

While this equipment might offer an answer to the problem at hand, we at FLOW would appreciate any further ideas that our readers might come up with.

We're Not On The Spot Here

To FLOW:

I believe you have had information in your magazines recently pertaining to a scale that could be mounted on a fork truck, whereby loads can be weighed on the spot rather than taking them to a scale.

We have a customer interested in such an item and would appreciate your informing us of the manufacturer of this type of scale.

Thank you in advance for any information you might be able to send us.

E. D. Farrell

E. D. Farrell Co., Inc.

Reader Farrell has been forwarded the information he requested.



You can blame us for OBSOLESCENCE

Obsolescence is more than a matter of age—it's often Man-made. The fork trucks you bought from us 10 years ago were the best money could buy—THEN. But today they're obsolete.

And frankly, we're responsible for it. Obsolescence is the result of what we've been doing the past 10 years: constantly working on ways to improve those trucks. Our older models never saw the day when they could come close to what we're building now. These new CLARK trucks are designed to do more work—and do it faster, better and at lower cost. They're built to last longer. And with the multi-job attachments we've developed for them, they not only do more work, they do more *kinds* of work. Today's truck is amazingly adaptable and extra-useful.

Here's a complete line of modern trucks—gas, electric and diesel powered—that will outproduce your old equipment. You bought your original truck because you wanted to cut costs and increase efficiency. Now, competi-

tive cost is more important than ever. And now is the time to replace the old equipment.

Your local CLARK dealer can give you the prescription for curing obsolescence—the specific reasons why new CLARK trucks are an investment in money-saving. Yes, you can blame us for obsolescence. But when you see what our new equipment will do for you, we're pretty sure you'll thank us for it.



CLARK		ELECTRIC AND GAS POWERED	
FORK TRUCKS			
AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS			
INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 13, MICHIGAN			
Please send:	<input type="checkbox"/> Movie Digest	<input type="checkbox"/> Material Handling News	
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Circle No. 101 on Reader Service Card for more information

make light
of
your heavy loads

handle them
"THRU-THE-AIR"



Capacities
up to
15 Tons.



How much does materials handling add to your production costs? Along assembly lines? Around machine tools? On loading platforms? In and out of storage? Handling materials is the largest single cost item in most plants. Start licking it now!

Thousands of plants have found the answer to efficient movement of materials with this quick, effortless, low cost way — "thru-the-air" with P&H Hevi-Lift Hoists. You merely press buttons to whisk loads from one station to another — no strain on skilled hands, no floor

congestion, no costly delays. With P&H's full magnetic push-button control, you can also have variable speed where needed.

P&H Hoist Engineers have helped solve hundreds of problems like yours. They can show you how to save money — in the places where most money can be saved.

CALL YOUR P&H HOIST DEALER

Or write us for Bulletin H-20.

P&H HOIST DIVISION

HARNISCHFEGER
CORPORATION

MILWAUKEE 46, WISCONSIN

the **P&H** Line



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FLOW • MARCH, 1953



■ Phantom view of steering system and trailing axle in Baker Fork Trucks



The most maneuverable fork truck

■ Maneuverability ranks high among features essential to efficient fork truck performance. Finger-tip control of steering, ability to make sharper turns and operate in narrower aisles, complete accommodation to uneven roadways, effective snubbing of road shocks — these are some of the qualities engineered into Baker fork trucks which make them the most maneuverable in their class — and less fatiguing to the operator.

Automotive type steering assembly with ball-type joints and anti-friction bearings in the steering linkage give you a truck as easy to handle as your automobile. Proper steering geometry minimizes "scrubbing" of tires. The wide-angle steering axle is mounted longitudinally in jumbo-size rubber blocks. This absorbs road shocks and provides constant, smooth traction and travel despite the most adverse floor conditions.

Write for your copy of the "Baker Handling Library"
a new portfolio of actual case histories.

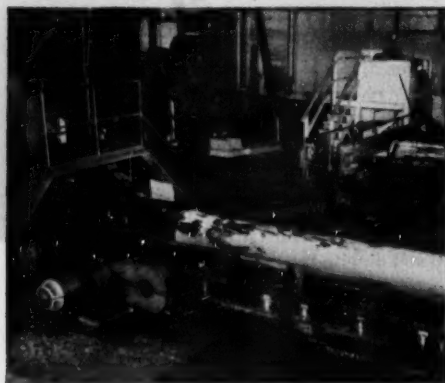
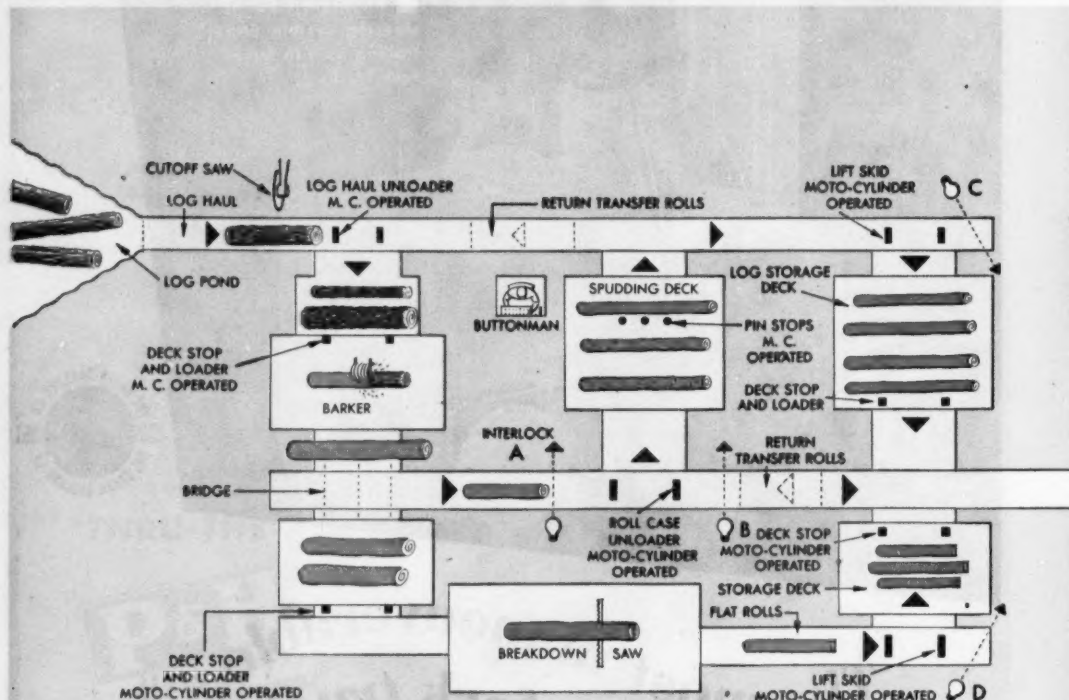
THE BAKER-RAULANG COMPANY
1219 WEST 80th STREET • CLEVELAND 2, OHIO

*The Baker-Lull Corporation • Subsidiary, Minneapolis, Minn.
Material Handling and Construction Equipment*

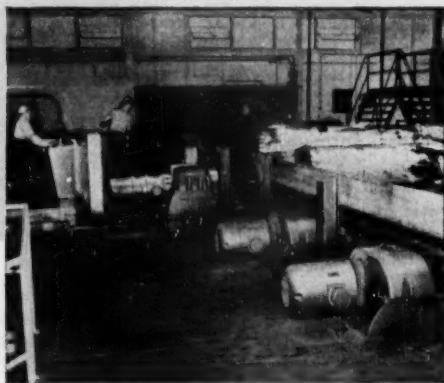
Baker

industrial trucks

How it works: Logs are conveyed up log haul from log pond. Cutoff saw reduces logs to workable lengths. Barker removes bark by water pressure. Small, clean logs go directly to chipper. Large diameter logs go directly to breakdown saw where they're split into smaller sections, and sent on to storage. Partly unbarked or unclean logs go to spudding deck where remaining bark or dirt in crevices is removed; then sent to log storage. Chipper cuts all wood into chips for making pulp.



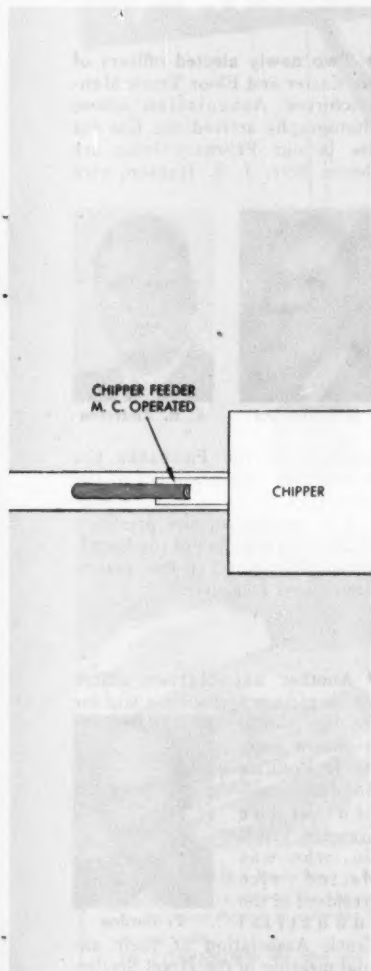
View of electric eye station with buttonman at right rear. Westinghouse Gearmotors, like the one in the foreground, drive all mill conveyors. You never have to grease them because their bearings are pre-lubricated and sealed at the factory. Think how much maintenance this will save you!



Logs approaching breakdown saw. Westinghouse Gearmotors drive the chain conveyor. Motocylinder, to rear, drives the deck stop and log unloader. Breakdown saw operator sits at control panel to left. Westinghouse Power Center, against wall, meets mill's demand for spacesaving "packaged-power."

Circle No. 143 on Reader Service Card for more information

Westinghouse materials handling system lets only 5 men control complete mill



If your problem is moving heavy, bulky materials, you may get some good ideas from this Westinghouse log handling system in a north-western wood mill. Thanks to a carefully planned electrical control system, five men—instead of fifteen or twenty—control the complete mill. A typical example of how Westinghouse can devise ways to help you reduce production costs by using man power more efficiently.

Remote control from start to finish

Aided by electric eyes and pushbuttons, one buttonman routes logs to and from each necessary operation. Four other men remotely control each processing step. Electric eyes (A and B) automatically activate Westinghouse Motocylinders which lift logs to the spudding deck; (C) lift clean logs to storage; (D) transfer log sections to storage.

System flexibility allows logs to be returned to any operation

This system is highly flexible because logs can be returned to any operation when necessary. For example, if rebarking is needed, the buttonman can route any log or section back to the barker via the return transfer rolls and the spudding deck.

Ingenious electric eye interlock automatically prevents jam-ups

Suppose a small, clean log is enroute from the barker to the chipper when the unloader arms are raised to flip another log to the spudding deck. In this case, when its beam is interrupted, the electric eye at (A) automatically stops the first conveyor section until the unloader arms return to the down position. This prevents the small, clean log from jamming behind the arms and causing a system tie-up.

Westinghouse can help you reduce production costs

Westinghouse-engineered materials handling systems, like this, are paying for themselves in all types of plants and mills . . . just as they will pay off in your own operation. Call your Westinghouse representative and learn more about how Westinghouse equipment and expert planning assistance can help you cut production costs by using man power more efficiently. Or write: Westinghouse Electric Corporation, Box 868, Pittsburgh 30, Pennsylvania.

J-94971

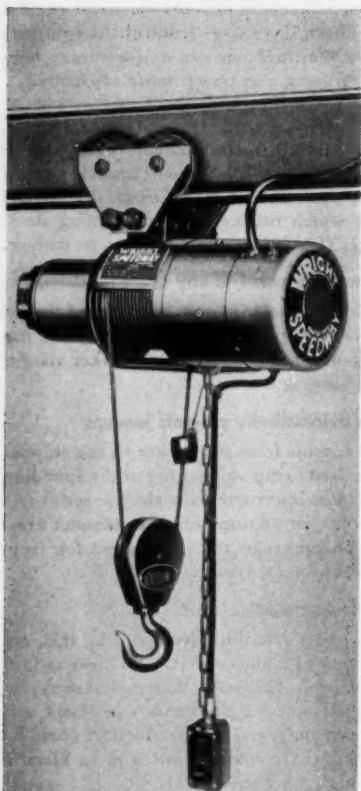
YOU CAN BE SURE...IF IT'S
Westinghouse





Wright Speedway Hoists

Why WRIGHT Speedway Hoists Require Less Servicing...



• 5 key features of WRIGHT Speedway Hoists mean longer life and less servicing. These features are heat-treated and surface-hardened alloy steel gears, hard alloy silver electrical contacts in controller, heavy duty crane type safety limit stop, automatic multiple disc load brake and ball bearing gear shafts.

And there are other features which add further to the fine service you get from a WRIGHT Speedway Hoist. For instance—grooved cable drum, improved plow steel preformed cable, concealed motor wiring, and completely enclosed, ventilated housing weather-proofed for permanent outside use. Ball and roller bearings seldom require additional lubricant. Gear train is sealed in oil bath chamber.

You can get standard lift, long lift, or close headroom WRIGHT Speedway Hoists in capacities from $\frac{1}{4}$ to 10 tons—all with these same quality features. See your local WRIGHT distributor or write our York office for DH-133-A. WRIGHT will save you money.

ACCO



WRIGHT HOIST DIVISION
AMERICAN CHAIN & CABLE

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Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

WRIGHT
Hoists
Trolleys
Cranes

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Association and Society News

• Two newly elected officers of the Caster and Floor Truck Manufacturers' Association whose photographs arrived too late for use in our February issue are shown here. J. S. Hanson, vice



J. S. Hanson



A. B. Anderson

president of the Fairbanks Co. was elected vice president of the association.

A. B. Anderson, vice president and general manager of the Nagel-Chase Mfg. Co., is the association's new treasurer.

• Another association officer whose picture arrived too late for use last month is shown here. He is Prentice



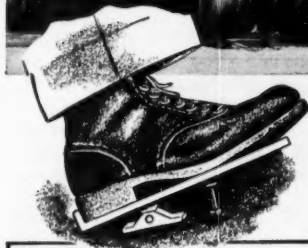
P. Borden

Borden, president of the Crescent Truck Co., who was elected vice president of the Industrial Truck Association at their annual meeting in the Hotel Statler, New York.

• Six university leaders (Cornell, Columbia, Massachusetts Institute of Technology, Michigan State, Purdue and Wayne) in material handling education met recently with equipment manufacturer and user executives to support a broader curricula and greater student interest in materi-

Put Your Foot Down

on MATERIALS HANDLING COSTS



GENERAL 20-TON YARDCRANE with Torque Converter and Foot Throttle will step up your plant yard efficiency

IN RAISING a heavy load, it is not necessary to race the engine. You engage the clutch with engine idle, then step on foot throttle to raise the load smoothly, with no jerk or strain.

IN LOWERING the load you have smooth, accurate control, and with the live, independent boom hoist you can spot the load exactly where you want it.

IN SWINGING the load, there is a smoothness which far exceeds that of other makes.

Best way to put your foot down on materials handling costs is to put your foot down on the throttle of a General 20-Ton Mobilcrane. You'll be amazed at the smoothly variable speed and the easy, accurate control of all motions. No jerking, no jarring in raising, lowering, or swinging the boom, just velvet-smooth performance that spots loads exactly where you want them and keeps maintenance at an all-time low. Quick conversion from Crane to Shovel, Hoe, Clamshell, or Dragline. For detailed information, consult the nearest OSGOOD-GENERAL Distributor.

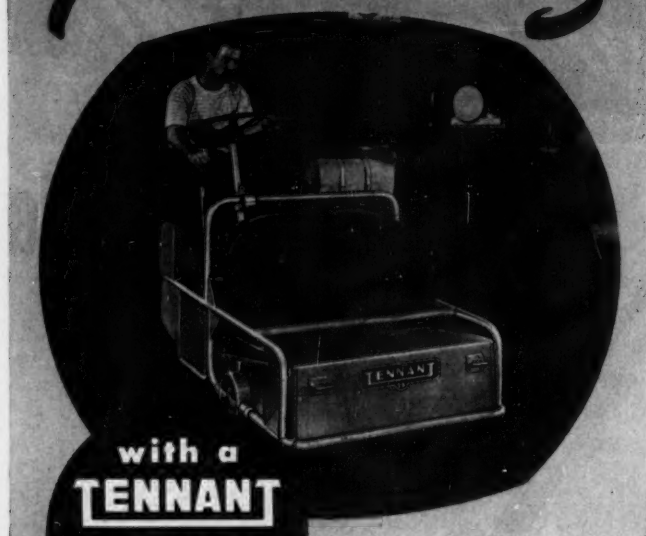
OSGOOD GENERAL

MARION, OHIO

OVER 100 YEARS OF ENGINEERING PROGRESS

Circle No. 38 on Reader Service Card for more information

1 man does the work of 5



with a
TENNANT
POWER
SWEEPER

PAYS FOR ITSELF. In a plant like this a Tennant Power Sweeper easily pays for itself in about 4 to 12 months.

Put just 1 man on a TENNANT Power Sweeper and he'll usually sweep more than a 5-man crew . . . do a cleaner job . . . and cause less disturbance in your busy aisles.

This fast, labor-saving performance is reported by hundreds of plants in many industries. And it's made possible by **EXCLUSIVE engineering features** . . . things that make it extra-easy for 1 man to replace a 5-man sweeping crew—or more.

NEW FEATURES SAVE TIME

REVERSES INSTANTLY. Saves time; no hand shifting of gears. Single pedal controls forward and reverse.

URNS "ON A DIME." Lets you get in and out of tight corners in fraction of usual time. Extra-easy to steer and control. Rear wheel automotive steering.

SWEEPS FAST; EXTRA CLEAN. Has maximum capacity exceeding 90,000 sq. ft. per hour. Powerful vacuum-brush system even gets dirt from mossy cracks, crevices.



FOR CLEAN, LOW-COST SWEEPING where battery power is desired, here's the Tennant Model 36 Electric Sweeper.

It's NEW . . . does the work of a 3 to 5 man crew . . . sweeps full shift on one charge (36 v. battery). Ask for bulletin.



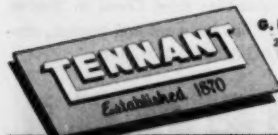
FREE!

An accurate estimate of savings your plant can make

It's yours for the asking—an accurate graph of your present sweeping costs . . . and how much you may save each month with a Tennant Power Sweeper.

Shows how soon a sweeper pays for itself. Get this graph today. No cost or obligation.

Write Today! Learn how much YOU can save with a Tennant Sweeper.



G. H. Tennant Co.
2576 N. 2nd St.
Minneapolis 11,
Minnesota

INDUSTRIAL FLOOR MACHINES

CREATORS OF THE TENNANT SYSTEM OF FLOOR MAINTENANCE—MANUFACTURERS OF EQUIPMENT AND MATERIALS FOR MAINTENANCE OF FLOORS, DECKS, ROOFS, HIGHWAYS

Quoted in Principal Cities

Circle No. 95 on Reader Service Card for more information

ASSOCIATIONS

Continued

al handling engineering as a career.

The College-Industry Committee on Material Handling Education, which is sponsored jointly by the Material Handling Institute and the American Material Handling Society, is laying plans for a seminar this spring.

College and university faculty men will conduct the program, "Teaching Material Handling," in Philadelphia on Sunday, May 17, preceding the 5th National Material Handling Exposition.

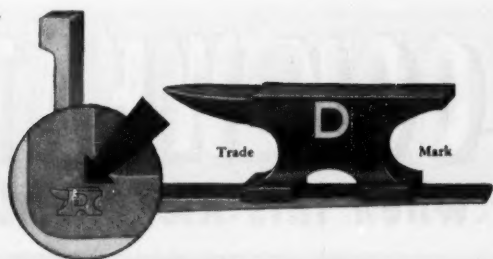
COLLEGE-INDUSTRY LEADERS MEET



Standing, left to right: V. J. Reade, Whitehead Metal Products Co.; H. T. Amrine, Purdue; E. W. McCaull, Jervis B. Webb Co.; W. V. A. Clark, M.I.T.; J. M. Apple, Michigan State; D. H. Bitney, Union Steel Products Co.; B. W. Saunders, Cornell; Seated, left to right: A. K. Strong, American Cyanamid; H. M. Palmer, Lewis-Shepard Products Co.; S. A. Larsen, Wayne Univ.; and committee chairman; J. W. Wunsch, Silent Hoist & Crane Co.; I. M. Footlik, committee secretary; F. C. Winter, Columbia.

• On March 26 the Cleveland Chapter of the American Material Handling Society will conduct its regular monthly meeting in the auditorium of the Cleveland Engineering Society. Following a cocktail hour and dinner Jim Bright, editor of *Modern Materials Handling* magazine, will bring to the group a picture of what the future holds in store for the materials handling industry.

(Continued on page 138)



Attention!

Lift Truck Manufacturers

*The Success of your product is carried on the forks of your truck
...they carry the load*



This trademark is the Symbol of fork SAFETY and RELIABILITY on your trucks. We are the Oldest and the Largest Producers of Lift Truck Forks, and DYSON forks have long led the field in performance. They are hammer forged of high quality steel to your specifications, and treated for MAXIMUM strength to meet your most severe requirements. THROUGHOUT the World, the needs of industry are carried on DYSON forks. Let us make your Lift Truck Forks, and help solve your fork problems.

SPECIAL ATTENTION

given special shapes and requirements

— Any quantities —

Prompt service is a "Dyson"
Tradition

We have never failed a customer.

JOS. DYSON & SONS, INC.

5125 ST. CLAIR AVENUE
PHONE HENDERSON 1-6157

Cleveland 3, Ohio.

LOOK WHAT

when this RAYMOND

BEFORE

Here's how Better Buy Wholesale Grocers' order-picking floor looked before palletizing! Studies showed the concern would have to reduce its stock if ordinary tiering trucks, requiring 12-ft. aisles, were installed.



STRADDLE TYPE TIERING TRUCK

Right angle tiers 48" pallets from 6' wide aisles. Travels 3 1/3 mph loaded, 4 mph empty. Cap. 2,000 and 3,000 lb. Telescopic and Non-telescopic models.

PATENT No. 2,564,002

The RAYMOND Tiering Truck is not a new, untried truck—it has proved itself in 3 years of actual use! By choosing from the complete line of RAYMOND Trucks, you can make dollar-and-space savings similar to those which Better Buy Wholesale Grocers enjoys.

M. MARKOWITZ
PRESIDENT

Better Buy
WHOLESALE GROCERS
P. O. BOX 31, FRESNO 7, CALIFORNIA

VENTURA & M
PHONE 3-4381

December 1, 1952

Mr. George G. Raymond, Jr.
Executive Vice President
The RAYMOND CORPORATION
Greene, N.Y.

Dear Mr. Raymond:

For several years, we tried to figure out a way to palletize our operation. Several engineers threw up their hands after making a study of our warehouse. They told us it would be impossible to operate fork trucks requiring 12-ft. wide aisles and still stock the number of items necessary for our business.

In the summer of 1951, we noticed an advertisement calling attention to your RAYMOND Electric Tiering Truck, which operates in 6-ft aisles. This advertisement was the spark that set off a new investigation. After several months of study, we made our first steel rack installation and ordered one RAYMOND Truck. Today, our entire order-making floor, comprising 50,000 square feet, is racked and we operate a total of four RAYMOND Trucks.

To say that we are happy with our new streamlined operation would be putting it mildly. On our order-picking floor alone, we gained 15% additional storage space. We now operate with eight less warehousemen, a savings of approximately \$2,500 per month. Also, there is a marked improvement in the attitude of our men, while errors in order-picking have decreased substantially.

Very truly yours,

BETTER BUY WHOLESALE GROCERS

E. A. Hamilton

By: E. A. Hamilton
Sales Manager.

"The Largest Distributor of Nationally Advertised Grocery Products in the San Joaquin Valley"

HAPPENED...

TRUCK MADE 6-FT. AISLES A REALITY...

AFTER...



WHAT A DIFFERENCE RAYMOND Tiering Trucks and 6-ft. storage aisles made in the Better Buy Grocers' warehouse! The firm gained 15% more storage space, required eight less warehousemen, saved \$2,500 per month in salaries.



**ELECTRIC INDUSTRIAL TRUCKS
HYDRAULIC ELEVATING EQUIPMENT**

WANT MORE FACTS?

Then mail this coupon and arrange for a demonstration. Be sure to ask for Bulletin 703, showing the complete line of RAYMOND Electric Trucks.



The RAYMOND CORPORATION

3306 Madison St., Greene, N.Y.

- ☐ Please arrange a demonstration at my convenience.
☐ Send me Bulletin 703 describing RAYMOND Trucks.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

Circle No. 43 on Reader Service Card for more information



Practically anyone can learn to operate a MOTO-TRUC! Anyone in your plant can become an operator with very limited instruction... This is made possible by MOTO-TRUC'S "Roller Grip" control.

Speeds are controlled by a "twist" of roller grip... Extreme up or down position of the handle sets the brake... A push button on either side of the roller grip controls up or down Hydraulic lift... it's as easy as that...

Why not get all the FACTS on MOTO-TRUC'S design features... Write for complete information.

Representatives in Principal Cities

The MOTO-TRUC Co.

1933 E. 59th STREET * CLEVELAND 3, OHIO
PALLET... PLATFORM... HI-LIFT TRUCKS
LARGEST EXCLUSIVE MANUFACTURER OF "WALKIES"



Circle No. 36 on Reader Service Card for more information

news from the SALES FIELD

Thomas L. Carver, formerly with General Motors Corp., has been named sales representative of the Fiber Glass Division of Libbey-Owens-Ford Glass Co. His headquarters will be in New York.

J. R. Alexander was recently named general sales manager of Quaker Rubber Co., Division of the H. K. Porter Co., Inc., Philadelphia. Company president T. M. Evans, made the announcement.



J. R. Alexander



H. J. McCormick

Link-Belt Co. recently announced the appointment of H. J. McCormick as sales manager of its Caldwell Chicago plant.

Lawrence R. Malm, who has served in the Pittsburgh area since 1947 as a sales representative for Heppenstall Co., has been appointed district manager with offices in Chicago. He succeeds J. C. Patton Jr., who has resigned.

The Steel Floor Division of Great Lakes Steel Corp. announces the appointment of William A. Baldwin as sales representative with offices in Chicago. Baldwin will be associated with Edward W. Fitzgerald in the sale and servicing of Nailable Steel Flooring among railroads having

where aisles are narrow, floor-loads limited . . . solve your handling problems with

KALAMAZOO
Xpediter



MODEL 301 with
18" forks, hydraulic
tilt and 18" lift.

...brought to you by
KALAMAZOO
... 70 years' service to
railroads and industry

ONLY 33" WIDE . . . MODELS 715 to
1025 POUNDS . . . HANDLES BOXES,
BAGS, BARRELS, PRODUCE AND
OTHER MATERIALS

6 MODELS TO SUIT YOUR PARTICULAR NEEDS

Here's a light-weight, low-cost industrial truck that speeds handling, cuts costs in congested areas and on light floors and elevators where larger, heavier equipment cannot operate. Xpediter's unequalled maneuverability and versatility makes it an important adjunct to your present handling equipment . . . extends the ad-

vantages of mechanical handling to every corner of your plant or warehouse.

Operation of Xpediter is simplicity itself. As easy to steer as a bicycle. No gear shifting required for forward and reverse travel. Simple, conveniently located hydraulic controls. Six rugged models, hydraulic or manual lift. For complete details, get Bulletin XF33.

SOME EXCELLENT DEALER TERRITORIES OPEN . . . WRITE FOR COMPLETE INFORMATION

Send, too, for details
on these **KALAMAZOO**
trucks . . . proven in
service throughout the
country

On display at
5th National Materials
Handling Exposition . . .
Booths 1537, 1539, 1541



KALAMAZOO MODEL 2500 SPEED TRUCK, 2,000 and 3,500 pound capacities. Operates in narrow aisles and box cars. Get Bulletin SF33



KALAMAZOO MODEL 3600 TRACTOR. A fast, efficient cargo carrier for congested areas. Ideal for small tractor-trailer operation. Get Bulletin TF33



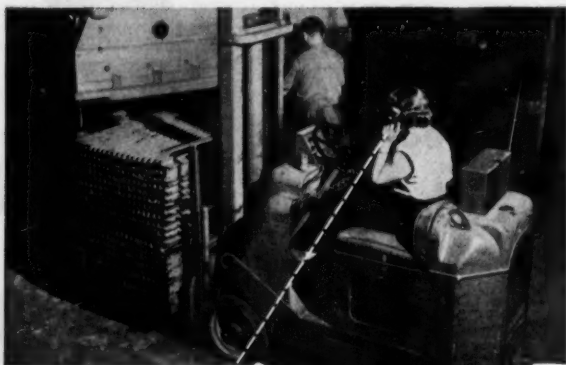
KAL-TRUK handles all types of bulk materials on construction jobs and in plants. Capacity: $\frac{3}{4}$ cu. yd. of concrete, 1 cu. yd. of bulk material. Get Bulletin KF33



MANUFACTURING SINCE 1883

KALAMAZOO MANUFACTURING COMPANY

KALAMAZOO, MICH., U.S.A.

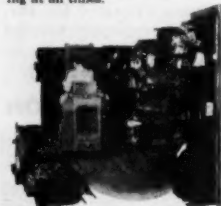


RCA radio-equipped truck can be located at any time. Operator receives instructions directly from dispatcher—travels directly from job to job.

Get two-way payloads with RCA 2-way radio



Dispatcher maintains close control over truck usage—knows where all trucks are—can keep trucks working at all times.



Driver can be contacted with RCA 2-way radio even when truck is surrounded by ceiling-high stockpiles of steel.

Metalworking plant reports . . . "Dispatching time cut from half-hour to 5 minutes"

Instant contact with all truck operators . . . anywhere . . . any time. That's the secret of efficient materials handling at a large Philadelphia metalworking plant.

"Radio helps maintain production schedules," says this plant's materials handling man. "The noise and the size of our plant made it impossible to find a truck in less than half an hour. Now we locate a truck and move it anywhere in five minutes. That's a substantial increase in truck usefulness."

"Since radio has been installed on our trucks, drivers can cover more area because they go directly from job to job without backtracking. Our savings will pay for the radio system in a year."

For extra usefulness from your truck fleet, investigate RCA 2-Way Radio. MAIL COUPON TODAY FOR FREE BOOKLET.



RADIO CORPORATION OF AMERICA
MOBILE COMMUNICATIONS CAMDEN, N. J.

RCA Engineering Products, Dept. 1310, Camden, N. J.

Please send me your free booklet, *Mobile Industrial Radio*.

Name _____ Title _____

Company _____ Address _____

City _____ Zone _____ State _____

☐ Please have a representative call on me.

Circle No. 142 on Reader Service Card for more information

SALES FIELD

Continued

headquarters in the Chicago-Minneapolis area. Baldwin formerly was associated with Minnesota Mining Co. in charge of railroad sales of its reflective sales division.

The industrial division of Gould-National Batteries, Inc., recently placed James S. McCullough in charge of sales promotion. He formerly directed advertising for the industrial truck division of Yale & Towne Mfg. Co. and sales promotion manager for Lamson Corp. of Syracuse.



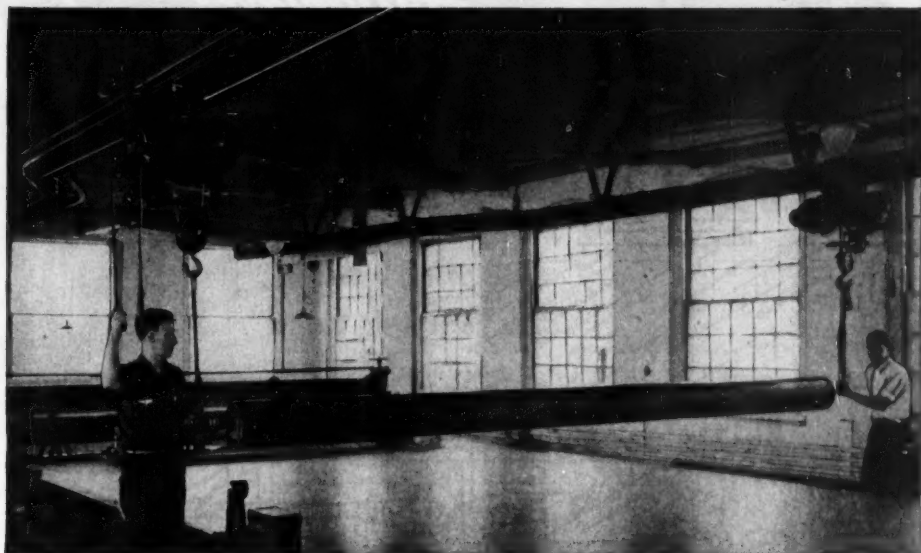
J. S. McCullough

Brainard Steel Division of the Sharon Steel Corp. has announced the appointment of six men to its sales staff. One of two new sales offices is being managed by Glen Boyd in Dallas, Texas. The other new office is in Providence, R. I., with Richard O. Heath in charge. Others appointed to the sales staff include Lewis H. Dickson, John P. Schweigart, Joseph F. Keeling and Larry Daurelle.

Completion and formal opening of a new sales and service center was announced recently by Bert-ram and Gorman, Buffalo, N. Y., sales representative for Automatic Transportation Co. Located at

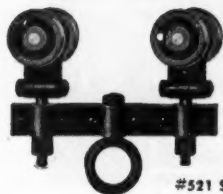


4400 Bailey Ave., the firm offers complete sales, shop and service facilities for Automatic's entire line of electric industrial and driver-led trucks.



OVERHEAD CONVEYING EQUIPMENT

save money - install it yourself!



#521 Single
Swing-Out Carrier



#702-S Side
Ear Bracket



Straight Track

No need for expensive installation costs with Coburn Overhead Conveying Equipment. Coburn track, brackets and carriers are simple in design . . . can be set up quickly and easily by your own mechanics or other plant personnel. What's more, the sectional design of Coburn track permits inexpensive rearrangement or extension as the need occurs.

Find out how you can get all the advantages of modern overhead conveying equipment . . . while at the same time keeping investment and installation costs to a minimum. Write for Catalog #220 to Coburn Sales and Engineering, 56 Sterling Street, Clinton, Massachusetts.

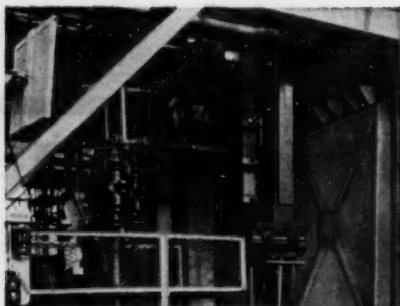
THE COLORADO FUEL AND IRON CORPORATION • Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION • Oakland, California
WICKWIRE SPENCER STEEL DIVISION • Atlanta • Boston • Buffalo
Chicago • Detroit • New York • Philadelphia

COBURN PRODUCTS

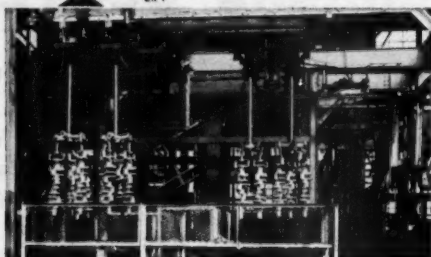
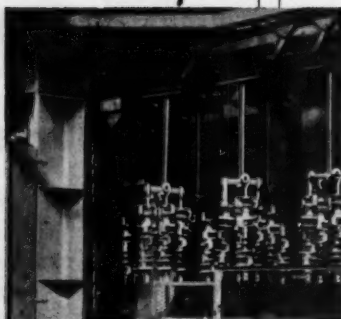
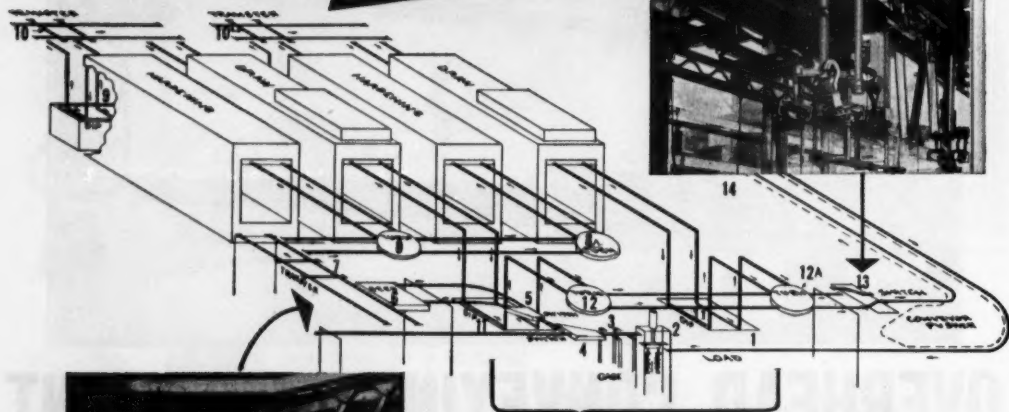
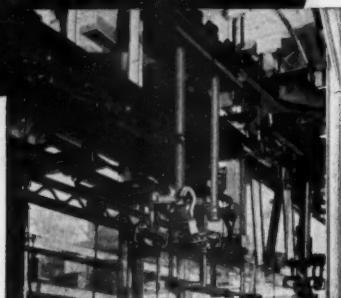
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION



1306



"Automation" by AMERICAN MONORAIL



KEY TO DIAGRAM

Station No. 1, Empty Carriers are loaded with 4 cranks and raised on Lift No. 2 to working level of furnaces. Carriers pass through gating device No. 3 to insure concentric loading. Loaded carriers are pushed through Switch No. 4 and Switch No. 5 which are controlled manually from the floor. Carriers are deflected right or left into Feed No. 6. From this point on the system is fully automatic.

Carriers work through Automatic Feed No. 6 onto Transfer Crane No. 7 which travels and lines up with Spur Tracks going to Turntable No. 8. Carriers then move onto the turntable and rotate 90 degrees for feed through the Hardening Furnace.

Upon emerging from this furnace they are dipped into Quench Tank No. 9 and then travel on Transfer Crane No. 10 which carries racks for return travel through the Drawing Furnace. Cranks then travel through this furnace and when finished are cooled in Tank No. 11 and fed through Turntable No. 12.

After rotation of 90 degrees the carriers pass through Shuttle Switch No. 13 for single line movement and pick-up by Pusher Conveyor No. 14 for transfer to unloading station.

From hand operated to fully automatic handling systems, American MonoRail will save you money. Regardless of how simple or how complicated your handling problems may appear to be, American MonoRail can engineer a system to fit your needs. Experienced engineers will gladly consult with you on any handling problems. Write for the new "Case Study File" showing many varied applications.

THE AMERICAN MONORAIL COMPANY

13129 ATHENS AVENUE

CLEVELAND 7, OHIO

Circle No. 132 on Reader Service Card for more information

Evils of low temperature— intermittent engine operation

- Exhaust smoking
- Oil screen plugging
- Crankcase and valve chamber sludge
- Sticking valves and plugged oil rings
- Rapid wear of critical moving parts

"you havin'
troubles
too?"

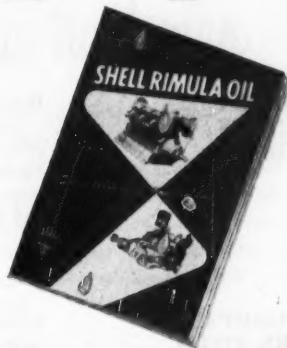
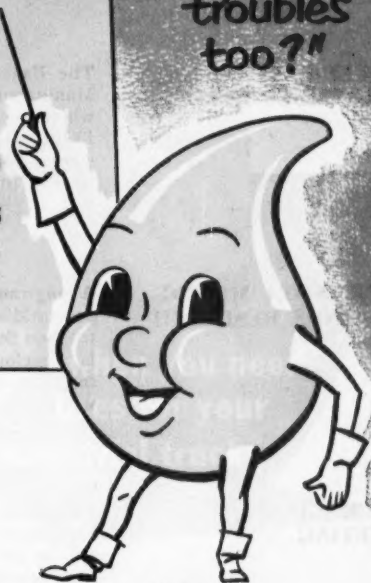
**"Read about the oil that
laughs at 'em!"**

THE engines that do our modern moving and shifting chores around the plant take more of a beating than meets the eye. Lift trucks are a good example. They idle much of the time . . . start and stop and work and loaf, week in and week out. That's the service that brings on the complaints listed.

Shell has met this problem with a special lubricating oil that literally clears these evils out of the picture. Shell Rimula Oil takes care of any of them . . . or any combination of them.

This is the product with a service record adding up to hundreds of thousands of miles . . . in delivery truck operation; in diesel and gasoline engines, both automotive and stationary; on construction projects; in farm machinery; in numerous plants.

Shell Rimula Oil is setting new standards of performance in low temperature—intermittent engine operation. Try it and see!



For further information on the cost-cutting advantages of Shell Rimula Oil, write Shell Oil Company, 50 West 50th St., New York 20, N. Y. —or, 100 Bush St., San Francisco 6, California.

SHELL RIMULA OIL



NEWS VIEWS TRENDS

BAKER-RAULANG PURCHASES LULL

The Baker-Raulang Company has announced the purchase of the Lull Manufacturing Corp. It is planned to operate the Lull organization as a wholly-owned subsidiary of Baker-Raulang under the name of the Baker-Lull Corporation. The purchase is said to be a move to provide added resources for expansion and development for Lull, and to widen the product lines of the parent company.

MINNESOTA MINING EXPANDS RESEARCH

A long-range building program for research purposes was launched by Minnesota Mining & Manufacturing Company with the purchase of a 125-acre tract on St. Paul's eastern boundary. The first unit in the multi-million dollar development will be a \$3,000,000 laboratory for the company's central research department. Construction of this unit will start this spring, and will be completed in the fall of 1954.

PACKAGING MEETING

Packaging Machinery Manufacturers Institute will hold its semi-annual meeting on April 18-19 at the Sheraton Hotel in Chicago. The Sheraton also will be the Institute's headquarters during the Annual Packaging Exposition, scheduled for April 20-23 at the Navy Pier.

MOTOROLA ORGANIZES SUBSIDIARY

Motorola Inc. has announced the organization of a wholly owned subsidiary corporation, Motorola Communications and Electronics, Inc. The new company will distribute products manufactured by the Communications and Electronics Division of the parent company, including two-way radio systems. It is stated that this separate company will provide the flexibility and latitude necessary to more effectively serve Motorola users.

NEW COMPANY ENTERS FIELD

Known as Molded Fiberglass Tray Company, a new company has been formed for the production of molded fiberglass trays and tote boxes for material handling. The company's plant will be located in Linesville, Pa., and sales will be concentrated on custom molding of fiberglass reinforced plastics and development and research work in this general field.

NEW OFFICE AND WAREHOUSE

Baldwin-Lima-Hamilton Corporation, Construction Equipment Division, has announced the opening of a new district office and warehouse at 1503 Northside Drive, Atlanta, Georgia. This Atlanta location will replace the office-warehouse in Memphis. The new location will centralize the district office and also offer better facilities for customers in the southern territory.

the man who
sells these . . .



also sells these . . .

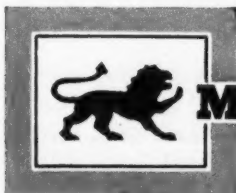


when you need
tires for your
industrial trucks



Call your truck man

● When your trucks need repairs, you naturally return to your truck distributor for service. And, doesn't it make sense that when your trucks need new tires that you should go to the same distributor? Your truck distributor knows what's best for your trucks . . . that's why he stocks all sizes of **Monarchs**. Remember this next time your trucks need new tires. Ask your industrial truck distributor to re-equip them with dependable **Monarch Mono-Cushions!**



THE
MONARCH
RUBBER COMPANY

550 LINCOLN PARK • HARTVILLE, OHIO

Mono-Cushions
a favorite on industrial trucks

When your trucks need new tires, insist on Monarch Mono-Cushions . . . the King of easy-riding, steady truck tires. Order them from your truck dealer. He knows your trucks best!

SPECIALISTS IN INDUSTRIAL SOLID TIRES AND MOLDED MECHANICAL RUBBER GOODS
Circle No. 35 on Reader Service Card for more information

NEWS, VIEWS, TRENDS

Continued

DICO PURCHASES WHEELBARROW FIRM

The Dico Company, manufacturers of industrial wheels and hand trucks, has expanded its manufacturing operations in the material handling field by purchasing the wheelbarrow business of the General Wheelbarrow Co., Wichita. Plant equipment has been moved to Des Moines and added to the present manufacturing facilities. "General" barrows are now in production, and will be distributed through customary wholesale channels.

PLANT EXPANSION AT INTERNATIONAL

Plans for construction in Los Angeles of a new converting plant for the production of corrugated fibre shipping containers were announced by International Paper Company, Container Division. Plans call for an over-all plant area of 175,000 square feet, including office and a roll stock warehouse designed to accommodate 6000 tons of kraft container board and Chemfibre corrugating medium. Planned capacity of the new manufacturing unit will be 48,000 tons per year.

NAME CHANGE IN ROUND GROUP

The name of The Bridgeport Chain & Mfg. Co. has been changed to The Round Bridgeport Chain & Mfg. Co. Bridgeport Chain has been associated with Round Chain Companies for many years, and the name change is in keeping with a policy to identify individual companies more closely as members of the Round Chain group.

SALES SCHOOL AT AUTOMATIC

A five-day sales training course for its franchise representatives' salesmen was conducted recently by the Automatic Transportation Company. The course included plant tours and lectures by outstanding authorities from industries using Automatic equipment, including canning, paper, food, manufacturing, steel, freight stations and warehousing.

BOWERS OPENS PLANT NO. 6

The opening of a complete battery manufacturing unit at Hialeah has been announced by Bower Battery & Spark Plug Co. It is said the acceptance of the company's batteries in Florida has necessitated the new plant, the sixth in the Bowers operation.

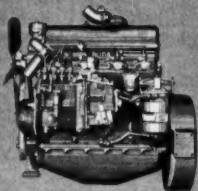
PAISLEY ACQUIRES HAYES ADHESIVES

Paisley Products, Inc., acquired Hayes Adhesives Company by direct purchase, and the Hayes plants will be operated as a Paisley affiliate. The purchase included the assets of the firm, formulas, manufacturing processes and equipment at three separate locations in St. Louis. A large portion of Paisley manufacturing will be transferred to the newly acquired plants.

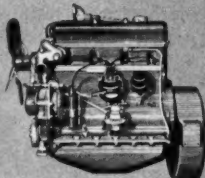
SHORT COURSE IN HANDLING

A two-day short course in material handling was held at Georgia Institute of Technology recently. The faculty was composed of outstanding industrial engineers who specialize in material handling problems and who have had teaching experience in the field. Included in the course were lectures, demonstrations and discussions.

Choose BUDA Diesel
or Gasoline Power



4-BD-153
BUDA DIESEL ENGINE

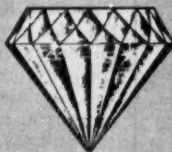


4-B-153
BUDA GASOLINE
ENGINE

Finer
IN EVERY WAY



**Pick BUDA....
and get MORE VALUE**



Never before have you been offered a line of fork trucks that promised—and delivered so much material handling speed... economy and stamina as the new Buda "FT" Series.

Beautiful to look at—but more important—tough, fast and maneuverable, Buda Fork Trucks are the product of the industry's outstanding design and engineering staff—men who *knew* the improvements required in fork truck design... and built them into the "FT" Series.

See these great new Buda trucks today at your nearby Buda Distributor's. You owe it to yourself. Write for Bulletin 1570. The Buda Company, Harvey, Illinois.

BUDA

ESTABLISHED 1881



THE LINE WITH ALL 3 FOR DIVERSIFIED HANDLING

20-31

KNOWN FROM
COAST TO
COAST FOR

**RUGGED
DEPENDABILITY**



REMEMBER

**MICHIGAN
YOUR BEST
CRANE BUY!**

Compare Feature for Feature

**IMMEDIATE
DELIVERY**

Every Michigan crane combines precision engineering and manufacturing with such important features as anti-friction bearings at all moving points on bridge and trolley, optional fluid couplings, and easily replaceable standard mill parts used throughout! Why not consult with our staff of material handling experts on your particular problem, with no obligation or cost? It may save you hundreds of dollars in your final crane installation!

WRITE FOR FREE LITERATURE TODAY!

MICHIGAN CRANE & CONVEYOR CO.

117 MCKINSTRY AVENUE • DETROIT 9, MICHIGAN

Circle No. 70 on Reader Service Card for more information

MEN in the news

... at Thew Shovel Co.

E. C. Brekelbaum, formerly vice-president and executive engineer of Harnischfeger Corp., has been appointed Director of Methods at Thew Shovel, according to A. W. Smythe, vice president and general



E. C. Brekelbaum

manager. The scope of this newly created post includes any operation within the engineering and manufacturing departments of the company.

... at General Box Co.

W. C. Embry, vice president and director of the company, has been elected first vice president of the Louisville, Ky., Chamber of Commerce. This is one of a long line of civic and business honors that have been paid Mr. Embry, who is a past director of the Fibre Box Association.

... at H. K. Porter Co., Inc.

Jackson Kemper has been elected vice president, according to an announcement by T. M. Evans, company president. Kemper also will continue in his present post as general manager of the Watson-Stillman Fittings Division at Roselle, N. J.

... at Westinghouse Electric Corp.

Andrew M. Kennedy Jr., E. S. Goodwin and J. S. Jacox have been appointed assistant general managers of purchasing at Pittsburgh. The men will exercise staff supervision over company-wide purchasing activity. All three

Acme Steel Strapping Insures S.A. *(Safe Arrival)*

Increases protection, and speeds packaging rate 100%



SUCCESSFUL SOLUTION to a difficult packing problem proved to be Acme Steel Strapping, here at the Orangeburg Mfg. Co., Orangeburg, N. Y.

Outstanding feature of sewer pipe made by Orangeburg Mfg. Co. is the material it's made of: fibers, impregnated with coal-tar pitch—non-corrosive, watertight, acid-resistant—but tricky to package.

Three different methods of binding the pipes together were tried without success. The materials either did an unsatisfactory job or proved to be too expensive.

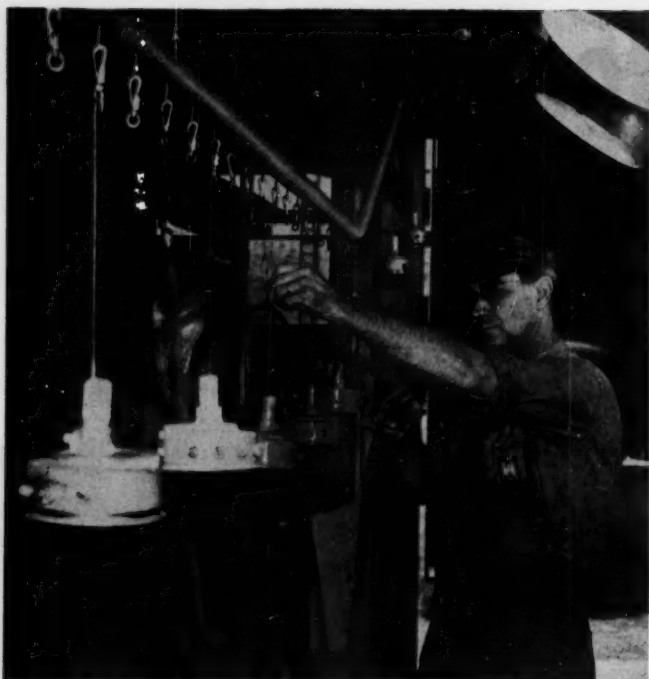
But Acme Steel Strapping did it, doubled the packing rate, doubled the number of pipes per package. It was easy, fast, economical. And it insured Safe Arrival.

This is a typical example of how Acme Steel Strapping helped one manufacturer. Very likely it can help you. Maybe it can solve problems you scarcely know you have—but which cost you money just the same. Write to Acme Steel Products Division, Dept. F33.

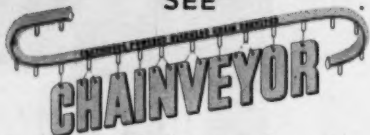


Acme Steel Products Division **ACME STEEL COMPANY** 2858 Archer Avenue, Chicago 8, Ill.

Circle No. 112 on Reader Service Card for more information



SEE



Before Buying Light Trolley Conveyors

Engineered for dependable overhead conveying, the Chainveyor, a light-duty, fully enclosed, continuous chain conveyor is indeed an outstanding performer. Extremely flexible with short radius curves and straight tubular track sections, the Chainveyor is easily installed and adaptable to unusual situations. The Chainveyor is, in fact, completely practical everywhere light overhead conveying equipment is required.

*The Chainveyor is manufactured by United States Spring and Bumper Co. of Los Angeles, Calif., and distributed nationally by Mathews Conveyor Company.

Write Today for Illustrative Bulletin No. CV-52

Sheet Metal Fabricating Small Parts Poultry Processing Frozen Food Handling

MATHEWS
CONVEYERS

Engineering Offices or Sales Agencies in Principal American and Canadian Cities
 General Offices, Mathews Conveyor Company Ellwood City, Pennsylvania
 Pacific Coast Division, Mathews Conveyor Company West Coast . San Carlos, California
 Canadian Division, Mathews Conveyor Company, Ltd. Port Hope, Ontario

Circle No. 71 on Reader Service Card for more information

MEN

Continued

have had purchasing experience in other Westinghouse plants. Kennedy was in charge of steel procurement, Goodwin was purchasing agent at Buffalo and Jaccox handled purchasing for the aviation and gas turbine division at South Philadelphia.

...at Goodyear Tire & Rubber Co.

Sam Dupree, assistant manager of the Industrial Products Division since 1947, has been named assistant to **R. S. Wilson**, vice president in charge of sales. Dupree's new position places him as Wilson's liaison executive with the company's Industrial Products, Shoe Products, Chemical and Steel Products Divisions.



S. Dupree

... at Motorola, Inc.

The election of a new officer has been announced by company president **Paul V. Galvin**. **John Silver**, formerly general manager of the communications and electronics division, has been elevated to the position of vice president in charge of operations of the division. Silver has been with Motorola since 1944. Previously he had spent 12 years with Crosley Radio Corp. and several years with Collins Radio Co.

... at Yale & Towne Mfg. Co.

Company vice president **Elmer F. Twyman** has announced the recent appointment of **Michael F. Ryan** as production manager at Yale & Towne's Philadelphia plant. In addition to his new duties, Ryan will continue to be responsible for outside subcontracting



M. F. Ryan

GLOBE OiLIFT

solves a
materials handling problem
that bogged down
loading operations



TRUCK loading operations at this Baltimore wholesale grocery firm were awkward and slow because the loading wharf was 54 inches higher than the warehouse floor inside. Trucks were kept waiting while a corps of workmen heaved and muscled crates, cartons, sacks, and barrels over the "cliff" between the loading wharf and the warehouse floor.

Handling costs were high. The "cliff" was a barrier to any plans for loading more trucks per day and thereby serving more retail outlets. Installation of a Globe Ramp Eliminator changed all that!

Now, the checker stands at the control button of the hydraulically powered platform and checks out each load as loaded hand trucks and dollies move smoothly and quickly over a level, direct route from stock shelves to delivery trucks. Incoming stock is handled in the same fast, cost-cutting way.

You can solve your lifting problems with a Globe OiLIFT. Write for valuable data on Ramp Eliminators, Machine Feeding Lifts, Loading Dock Lifts, Production Lifts. Ask for Bulletin F-508.

GLOBE

THE BEST LIFT

GLOBENOIST COMPANY, 1000 E. Mermaid Lane, Philadelphia 18, Pa.
(Factories at Des Moines, Iowa and Philadelphia, Pa.)

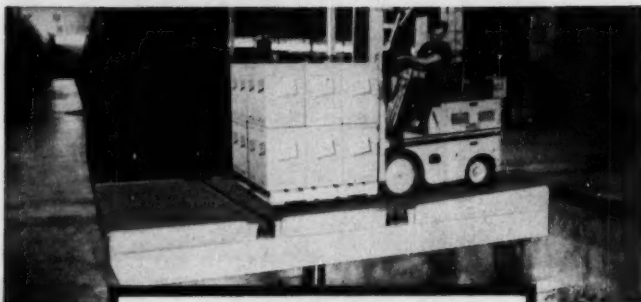


Photos show full cycle of operation of Globe OiLIFT Ramp Eliminator in warehouse of Baltimore wholesale grocery firm. In "down" position, the lift platform recesses flush with warehouse floor. Load is lifted quickly to upper level, where it is moved by direct route to waiting trucks.

Oilhydraulic Transfer Bridges

CLOSE THE GAP

ACROSS SPUR TRACKS



ABOVE—Transfer Bridge raised and in use.

BELOW—Lowered and recessed for rail traffic.



Eliminate detours . . . speed up plant traffic

This hydraulically operated bridge forms a roadway over spur tracks to cut out costly detours and time-consuming congestion. Recessed rails become a part of the track when bridge is lowered. The Transfer Bridge is raised and lowered by a powerful Oilhydraulic jack, operated on the same principle as Rotary elevators and auto

lifts. Power is supplied by a simple, inexpensive power unit. Dual jacks, automatically equalized, can be furnished for long spans, wide bridges, and heavy loads.

Drawbridge and other types of transfer bridges are also built by Rotary to fit the plant layout and the job to be done. Mail coupon for catalog and complete data.

See our exhibit at Materials Handling
Exposition May 18-22—Philadelphia

MAIL NOW
FOR
CATALOG



ROTARY LIFT CO.,
1041 Kentucky, Memphis 2, Tenn.
Send catalog on Oilhydraulic Transfer Bridges to:

Name.....

Address.....

Oilhydraulic Transfer Bridges

Circle No. 97 on Reader Service Card for more information

MEN

Continued

work. He joined the company in 1920 as an apprentice and has since served as foreman of truck production, superintendent of methods, and since 1952 has been responsible for procurement and subcontracting for the Philadelphia plant.

... at Karl A. Herman Co.

The appointment of Frank N. Reens as national sales manager has been announced by company president, Karl A. Herman. Reens' post was created because of increased business resulting from the addition of new products to the company's line. For the past 3 years Reens has been sales engineer for the Associated Handling Equipment Co., and for 12 years prior to that was in the plant engineering department at Nash-Kelvinator.



F. N. Reens

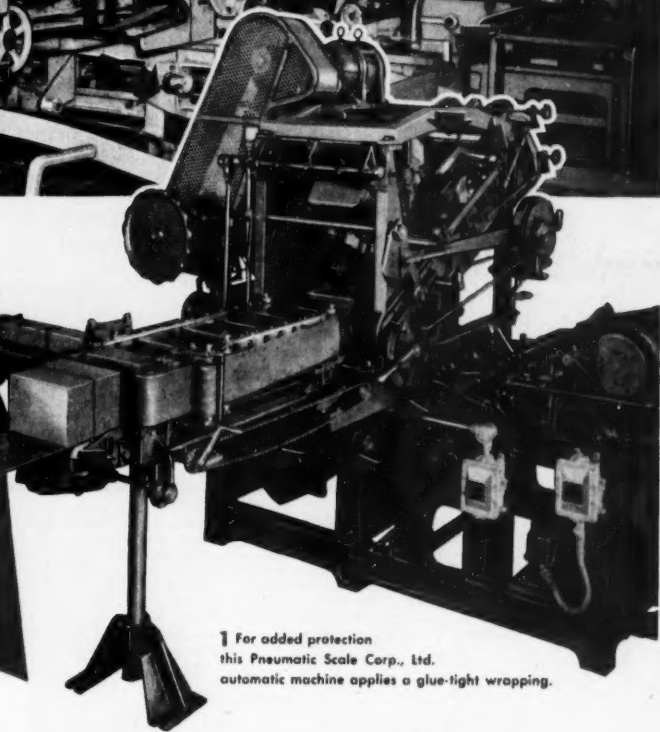
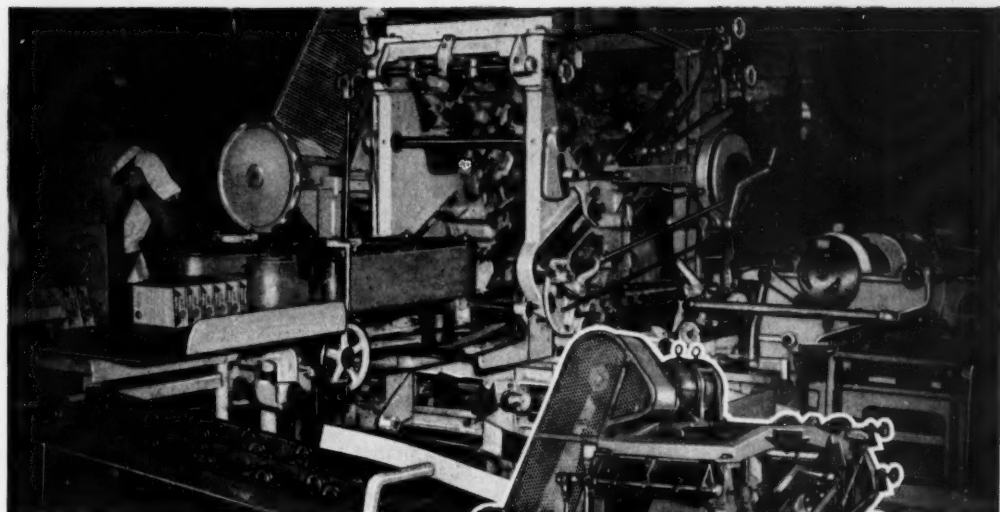
... at Hyster Co.

The appointment of H. J. Murray to the position of chief accountant has been announced by Eugene Caldwell, vice president and general manager of the company. Murray has been employed in the accounting department for almost six years.

... at Harnischfeger Corp.

The promotion of George A. Schmus to manager of the Parts and Service department has been announced recently. Next year will mark his 25th year with the company. He has served as traffic manager since 1937. Prior to that time he gained wide experience in the company's purchasing, credit and stores control departments.

(Continued on page 139)



For added protection this Pneumatic Scale Corp., Ltd. automatic machine applies a glue-tite wrapping.

● High speed automatic packaging equipment makes possible the economical and safe distribution of many products from source to ultimate user.

It is significant that on the finest types of specialized equipment of this kind made during the past half century, Diamond Roller Chains have been selected for constantly increasing numbers of applications.

Their precision and long-life dependability help materially in assuring trouble-free operat-

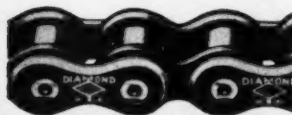
ing performance. Their flexibility of application helps simplify the machinery design. The cooperation of the Diamond Engineering Staff is available at all times.

DIAMOND CHAIN COMPANY, Inc.

Dept. 624, 402 Kentucky Avenue,
Indianapolis 7, Indiana

Offices and Distributors in All Principal Cities

Refer to the classified section
of your local telephone directory
under the heading CHAINS or CHAINS-ROLLER



DIAMOND



**ROLLER
CHAINS**



Circle No. 144 on Reader Service Card for more information

INSIDE AN EXIDE-IRONCLAD



Inside... where it counts most... EXIDE-IRONCLAD is entirely different than any other battery. It's made that way by EXIDE'S exclusive IRONCLAD slotted-tube construction... a principle that provides direct operating-hour savings for you.

**OF ALL BATTERIES, ONLY EXIDE-IRONCLADS
HAVE POWER TUBE POSITIVES**

The positive plate is different... unique... exclusive. It is the most effective retainer of active material yet demonstrated in heavy duty service. Slotted tubes contain the active material. So fine are the slots that, while permitting easy access of electrolyte, they retard the active material from washing out, hold it during repeated cycles of charge-discharge, and the vibration of rough use.

Today's battery-powered equipment is being used harder than ever before. Unless the batteries have internal shock protection they tend to deteriorate under hard usage—both electrical and mechanical. Only Exide-Ironclad has the plus-protection of the tubular positive that can withstand today's more exacting and rigorous heavy-duty battery services.

Your EXIDE sales engineer will give you the factual inside story. See for yourself why only an EXIDE-IRONCLAD gives maximum day-after-day service under the most difficult operating conditions... *with a minimum of maintenance expense.*

THE ELECTRIC STORAGE BATTERY CO.
Philadelphia 2

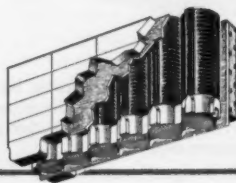
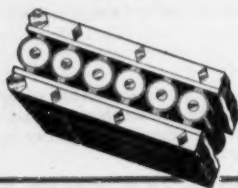
Exide Batteries of Canada, Limited, Toronto

1888... DEPENDABLE BATTERIES FOR 65 YEARS... 1953

Cross section shows relation of positive plate to separators and negative plate. Note the much greater exposure of active material to electrolyte as compared with that of the usual flat positive plate. This greater exposure makes possible the high power ability and uniform-voltage characteristics of the Exide-Ironclad. The negative plates have been made extra heavy to balance the increased capacity of the power tube positives.

Running through center of each tube is an alloy core which is cast with the heavy top cross bar. These form the sturdy, non-buckling grid. Both core and top bar are made of Exide's new corrosion-resistant Silvium, an alloy of silver, lead and other components, which adds greatly to plate's long life.

New polyethylene insulating tube sealer of acid-proof, non-corroding plastic fits snugly into bottom of slotted tubes and further reduces loss of active material. Thus more active material remains available, and the high battery capacity is maintained for a longer working life.



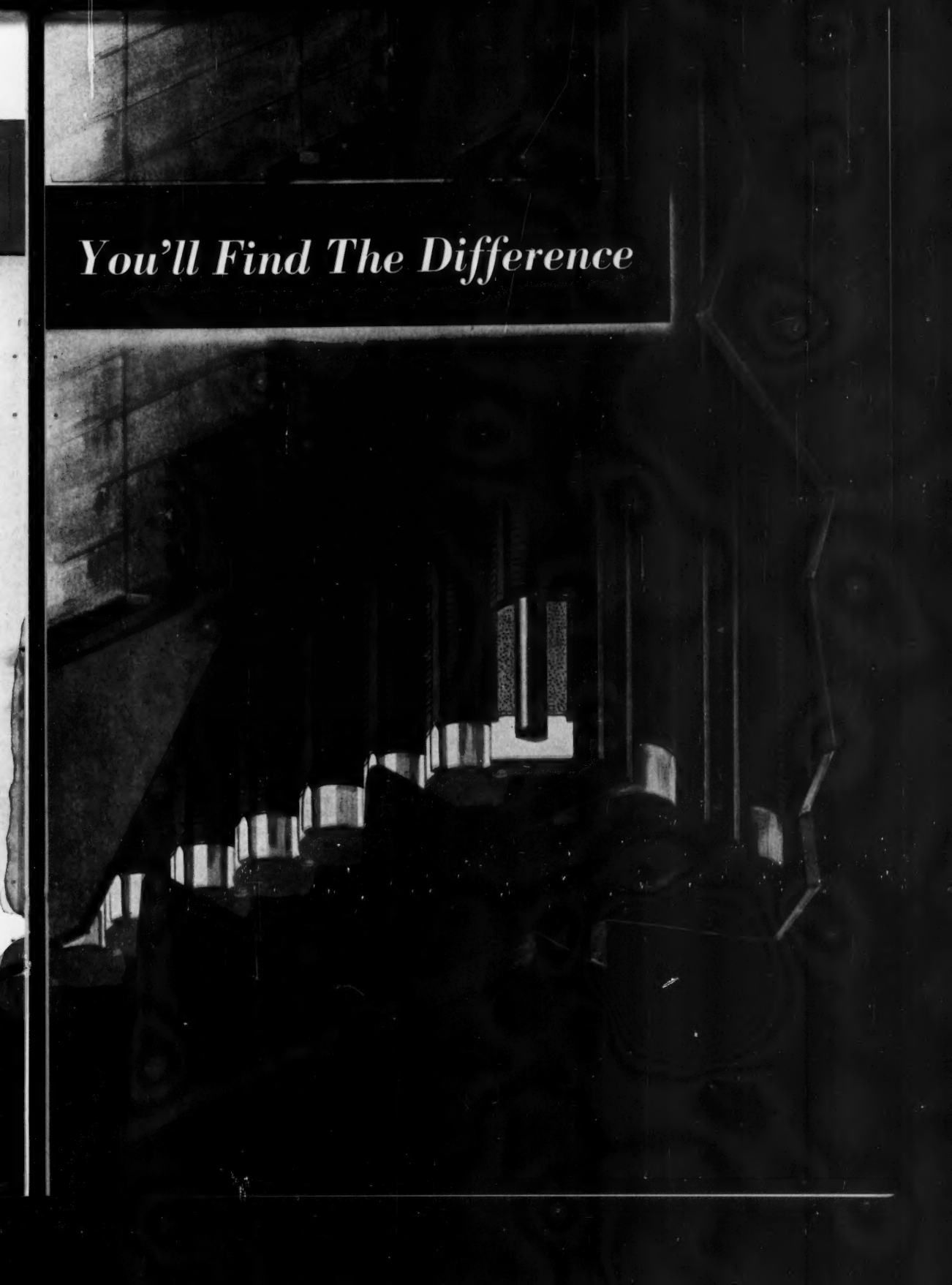
Exide-Ironclad

YOUR BEST POWER BUY... AT ANY PRICE

"Exide-Ironclad" and "Silvium" Reg. T.M., U.S. Pat. Off.

Circle No. 14 on Reader Service Card

You'll Find The Difference



Loading Dock... or Parking Lot?



...one of
Magliner's 34 Standard Dock Boards
 will load Your Trucks
FASTER... SAFER... AT LOWER COST!

Magliner standard magnesium dock boards insure swift in-and-out truck movement... prevent valuable loading areas from becoming costly parking space! Magliner's 34 load-engineered standard models provide a low-cost link between truck and dock for virtually all truck docks... eliminate the need for expensive, custom-made equipment. Get smooth, rapid material flow from carrier to plant... keep trucks on the move! Gain substantial reductions in loading and unloading costs! Equip your truck docks with magnesium-light, magnesium-strong Magliner standard dock boards! Write today for bulletin DB-203.



MAGNESIUM DOCK BOARDS

Light! Strong!
Safe!

Adjustable To Varying
 Heights and Spans

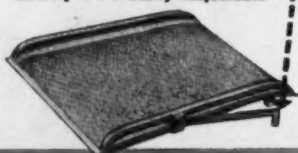
WRITE FOR BULLETIN DB-2031

Exclusive

AUTOMATIC DROP LOCK

(pat. applied for)

- Positive Lock Prevents Slippage
- Quickly... Easily Adjustable



Custom-Engineered Dock Boards Also Available—Write For Information
MAGLINE INC. • P.O. BOX 346 • PINCONNING, MICHIGAN

Circle No. 31 on Reader Service Card for more information

Highlights Of The Month's News...

A LREADY heralded as the largest capital goods show slated to be held anywhere in the country during the year, the Materials Handling Exposition at Convention Hall, Philadelphia, looks like it's going to really bulge the seams of all six halls of Philadelphia's spacious auditorium starting May 18.

And here's a tip if you're planning to attend and haven't yet made hotel reservations: get arrangements made right away. Available hotel space is disappearing fast for the week of the show.

The size of the show and the widespread interest it creates makes us stop and think about how tremendously the material handling industry has grown in the last 15 years or so.

And, correspondingly, brings to mind a statement that came across our desk the other day. It was made by George Spatta, president of Clark Equipment Company, who voiced his thoughts on the future of the industry.

"Today's industrial truck position," says Mr. Spatta, "is comparable with the position of the automobile in the late '20's—just enough of them had been produced to whet the appetite of the mass market."

He goes on to say that manufacturers are becoming aware that the "direct" labor costs involved in the actual production of a product are generally a small fraction of the total cost of that product and very often these operations have been mechanized to the point that further economies are not possible without tremendous capital outlays.

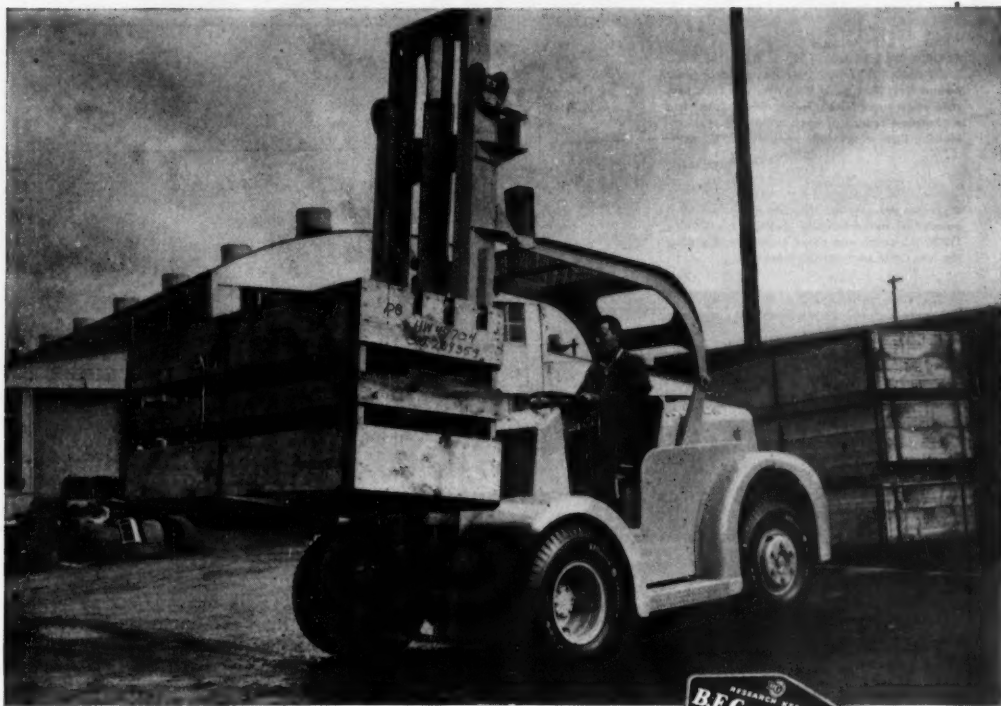
Another trend that substantiates the ever-increasing use of material handling equipment is the rising number of manufacturers who are leasing their equipment to a new group of prospective users—those who need and want the equipment, but have been financially unable to do so.

Up to now, conveyors and industrial trucks have been made available under this plan. Which seems to point to an even healthier future for the industry.

B.F. Goodrich

TIRE AND WHEEL

ANALYSIS cuts industrial tire failures, saves you up to 50% on tire costs



WHAT caused your last industrial tire failure? Overloading, oily floors, rough hauling surfaces—all possibilities—or was it the *tires themselves*? If so, chances are that with the *right* tire you can increase tire life—perhaps even double it. Like the equipment they carry, industrial tires are designed to do specialized jobs. Point is, get the specific tire and job together.

B. F. Goodrich has developed the Tire and Wheel Analysis Plan to help you do just that. Without obligation, a trained BFG man will study your materials handling operations and recommend the right tires for you to use. His advice will be impartial, for B. F. Goodrich makes, and BFG retailers sell, a complete line of industrial tires.

Use the tires designed for the job and you'll save as much as 50% on tire and wheel costs through greater materials handling efficiency, less expensive maintenance and repair time.

To find out more about this free B. F. Goodrich Tire and Wheel Analysis Plan, send in the coupon or call your BFG retailer. A special TW Analysis Plan is available for manufacturers of industrial handling equipment.

Always specify B. F. Goodrich tires when ordering new equipment



The B. F. Goodrich Co.
Department TW-237, Akron, Ohio

Please send me:

- ☐ Additional information on your new Tire and Wheel Analysis Plan.
☐ A free copy of your "Industrial Tire Guidebook".

Name _____

Title _____

Company _____

City _____ State _____

Circle No. 90 on Reader Service Card for more information

SR-4[®]—DEVICES IN INDUSTRY... USES UNLIMITED

Problem:

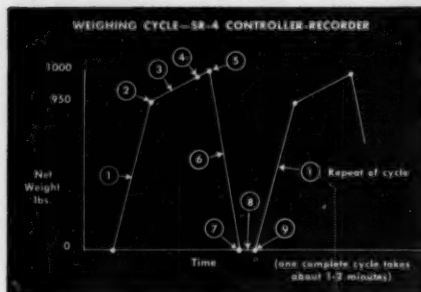
How to weigh automatically an expensive plastic from storage hopper into freight cars.

Solution:

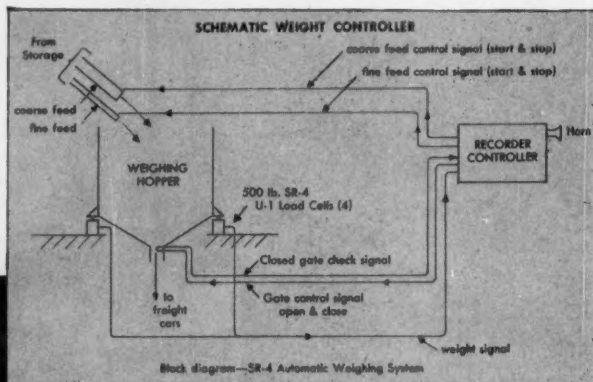
A large chemical company does it rapidly and accurately with a completely automatic SR-4 Weighing System.

BLOCK DIAGRAM—SR-4 AUTOMATIC WEIGHING SYSTEM. Outputs of four 500 pound U-1 SR-4 Load Cells are totaled into strip chart recorder-controller which furnishes a complete record of each weighing cycle including final and initial weights.

Operator pre-sets the number of cycles. SR-4 controller automatically counts the cycles (1000 lb. each) and stops automatically after the last cycle and notifies operator.



1. Filling weigh hopper with coarse feed (fast).
2. The system shuts off the coarse feed automatically and starts the fine feed (slow). This 950 lb. control point is adjustable (could be at, say, 980 lb.).
3. Filling with fine feed.
4. Fine feed automatically shuts off at 998 lb. (adjustable) ... to allow for amount of material between feeder and weigh hopper.
5. Check weight 1000 lb. ± 1.0 lb. (Adjustable width— ± 1.0 lb. to ± 3.0 lb.) Hopper automatically emptied or alarm if no check.
6. Emptying hopper.
7. Zero check (0.1%, adjustable). Gate closed automatically, or alarm if no check.
8. Time delay relay—automatic.
9. Coarse feed started automatically (after instrument receives signal that hopper gate is closed).
1. Cycle repeats until pre-set number of loads are in car.



This SR-4 System is giving all of these advantages:

- ... System will pay for itself quickly due to its very high accuracy in weighing large daily shipments of such an expensive material.
- ... Only one operator needed . . . just part time.
- ... Speed of operation (less than two minutes per 1000 lb. cycle) cuts costs.
- ... Automatically furnishes complete record of each weighing for inventory control and billing.
- ... Rugged construction and absence of moving parts mean that maintenance will be virtually unnecessary except for replacement of vacuum tubes.

Baldwin SR-4 Devices are remarkably versatile and economical for countless industrial applications. You, too, can make substantial savings in your measurement of load, pressure or torque by utilizing SR-4 Devices.



For latest technical information please write for Bulletins 306, 324, 325, 326 and 329, to Baldwin-Lima-Hamilton Corp., Dept. 3011, Philadelphia 42, Penna.

BALDWIN-LIMA-HAMILTON

General Offices: Philadelphia 42, Pa. • Offices in Principal Cities

TESTING HEADQUARTERS

Circle No. 109 on Reader Service Card for more information



13.75 YEARS "AT HARD LABOR"

Records of the operation of a fleet of electric industrial trucks in an eastern plant of a large manufacturer of domestic heating equipment show that all cells of all EDISON storage batteries replaced during the past five years gave an average service life of 13.75 years.

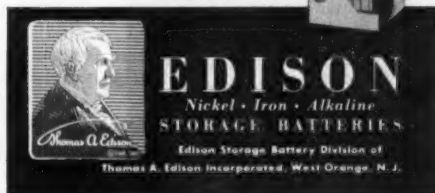
The EDISON batteries have never failed to furnish ample power for continuous, full-shift truck operation. And the trucks are hard workers. They regularly handle loads of sheet steel and fabricated metal parts averaging close to their full rated capacities. On occasion, the batteries have operated the trucks for 10 hours without being exchanged—an indication of their ample reserve

of operating power *through the very end of the shift.*

Such outstanding performance is not unusual. It's the kind of performance that may be expected from EDISON batteries anywhere under similar conditions of application, operation and maintenance. Get the facts about what they can do on *your* job. It will pay you to send for Bulletins S. B. 3808 and S. B. 2039 and the address of your nearest Edison field engineer.



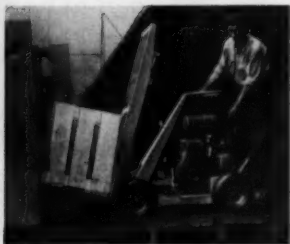
Most Dependable Power . . . Lowest Over-all Cost
. . . you get both with an EDISON



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What's

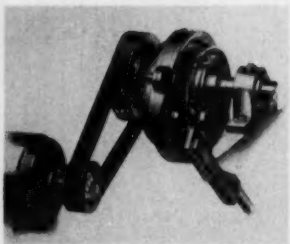
NEW in equipment



Small-Size Industrial Truck

The "Xpediter" industrial truck, manufactured by Kalamazoo Manufacturing Company, is said to combine the convenience of the hand truck with the utility of power and speed. It is designed to handle boxes, barrels, drums, bags, produce, L.C.L. freight, castings, machined parts, etc. Its compact construction, small turning radius and front wheel steering enable it to move through narrow aisles and crowded or cluttered areas. Its light weight permits use on elevators and floors where heavy units cannot operate.

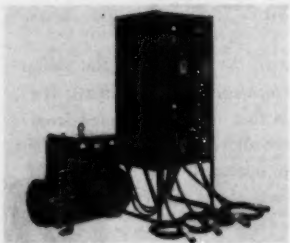
Circle No. 170 on Reader Service Card for more information



Shaft-Mounted Speed Reducer

Shown is one of a series of 20:1 ratio speed reduction units featuring improvements in gears, bearings, housing, lubrication and oil sealing systems. Made by The American Pulley Company, the gearing in the speed reducer consists of two trains of the single-helical type. Gears are precision-cut from alloy steel forgings and are flame hardened. Both ball bearings and tapered-roller bearings are used where each can be utilized most effectively. Gearing and bearings are continuously splash-lubricated.

Circle No. 171 on Reader Service Card for more information



Automatic Battery Charger

Illustrated is the four-circuit Model 676-18-4 Hobart automatic battery charger with a 15KW generator and a 25 h.p., 220/440 volt motor. It is designed for 8-hour automatic charging of 18-cell lead-acid batteries of 450 ampere-hour capacity. Each circuit of the dead-front charging panel includes the Hobart Y-500 charge control unit. Manufactured by Motor Generator Corporation, other models of the charger are available with two, three, four, five, six or more circuits and generators up through 50 KW capacity.

Circle No. 172 on Reader Service Card for more information



Rubber Dock Bumper

Manufactured by the Durable Mat Company, these rubber dock bumpers are mounted on loading docks and prevent damage to truck bodies and castings. They are resilient and shock absorbing, and are said to require no facing or covering, thus eliminating upkeep. The manufacturer claims they will not pack hard, nor flatten, and will not freeze. They are made in 3 and 4 foot sections, the combinations of which will accommodate all dock openings. Another feature is the reduction of losses of fragile freight due to impacts.

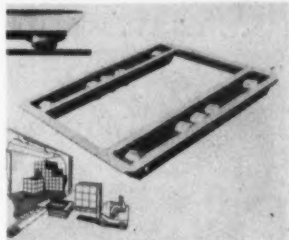
Circle No. 173 on Reader Service Card for more information

Capsuled descriptions summarizing the latest information obtained from manufacturers. To get more details quickly, ask for them by number on the free-mailing Reader Service Card.

Reefer Car Pallet Roller

This pallet roller, manufactured by Frank L. Robins Company, permits full 360° movement of loaded pallets into or out of a reefer car equipped with slatted decks. The rolls of the pallet roller are heavy gauge, large diameter and have crowned ends for free rolling and floor protection. The frame is welded high tensile steel, and equalizer design is said to retain parallelism and alignment of the frame under all conditions. The frame contains hexagon holes to prevent the axles from turning.

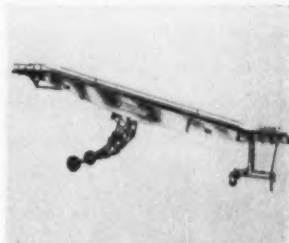
Circle No. 174 on Reader Service Card for more information



Conveyor Accessories for Versatility

Belt Corporation announces seven major accessories for the Belt Versaveyor to increase the versatility of this portable belt conveyor. These items include a gravity discharge section, powered discharge section, gravity feed section and support stands for floor-to-floor applications without undercarriages. These accessories may be used alone on the unit or in combination with others. Guide rails are also available, as well as couplings to connect the conveyor into a gravity or powered system.

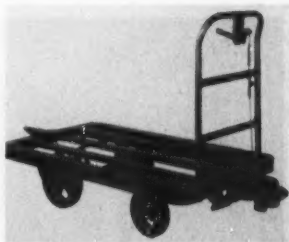
Circle No. 175 on Reader Service Card for more information



Combination Hand Truck-Trailer

Manufacturer of a combination hand truck-trailer designed to handle palletized loads is Mercury Manufacturing Company. Having a capacity of 4000 pounds, it is an all-steel, caster-steer trailer equipped with a brake mechanism designed to permit easy manual control of the hand truck and load when operating on grades. The trailer brakes are of the external contracting type, and are applied by depressing a hand-operated lever. Dimensions are: length, 62 inches; width, 36 inches; height of flush deck, 13 inches.

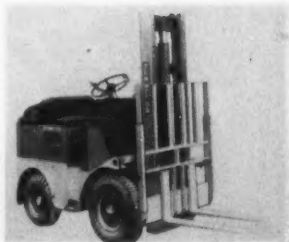
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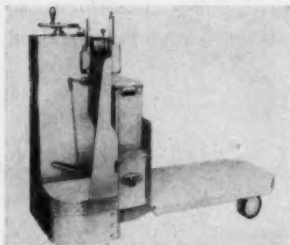


Fork Truck Extension Backrest

Safe handling of unusually high multi-unit loads is said to be simplified by this extension backrest, a standard accessory engineered by Towmotor Corporation. Extending from the vertical carriage frame, the backrest facilitates handling stacks of case goods, bags, bales or other loads which normally extend above the top of the carriage. Designed for use with any Towmotor model, it is said to be attached or removed in a few seconds. To attach, extension pins are inserted into sockets. To remove, it is lifted out.

Circle No. 177 on Reader Service Card for more information

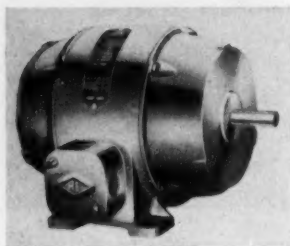




Platform Truck for 6-foot Aisles

This Transveyor riding-type electric platform truck, manufactured by Automatic Transportation Company, permits 6-foot aisle operation. It is a compact, lightweight, maneuverable unit with 4000-pound capacity. Platform heights are 6, 7, 9, or 11 inches, and platform lengths vary from 36 to 72 inches. The overall length is from 61 to 97 inches. Features include four-wheel construction with compensating suspension, providing load equalization on both front wheels, regardless of floor conditions.

Circle No. 178 on Reader Service Card for more information



Multi-Speed Electric Motor

Power versatility is claimed for this multi-speed electric motor, since a single unit can be operated at different speeds to fit the needs of special jobs. Manufactured by Reuland Electric Company, the motor is available in either 2, 3 or 4 speed ratings, and further versatility is provided by torque-horsepower-speed combinations. Motor size ranges from ½ h.p. to 150 h.p. Can be furnished in either standard, totally enclosed, splash-proof or explosion-proof designs.

Circle No. 179 on Reader Service Card for more information



Heavy Duty Truck Crane

This heavy duty truck crane is rated at 6 tons capacity, and is available with a complete line of matching attachments, including shovel, clamshell, dragline, hoe, magnet, wood grapple and pile driver. Manufactured by Schield Bantam Company, the machine mounts on a special Bantam crane carrier, or any standard tandem or heavy duty single axle truck. A power boom hoist, which gives power lowering as well as raising, is standard equipment. Control levers are said to be conveniently located, reducing operator fatigue.

Circle No. 180 on Reader Service Card for more information



Wire Stacking Box

A stacking type material handling box, made by Equipment Manufacturing, Inc., has sides and bottom of wire fabric to decrease weight and allow for ventilation and drainage. The wire is welded at ends and each intersection for strength. Bottom frame and corner uprights are square welded steel tube. Stacking caps are the self-centering type. Capacity of the standard model shown is 4000 pounds, can hold approximately 30 cubic feet. It is available in various meshes and sizes according to load requirements.

Circle No. 181 on Reader Service Card for more information



Truck Body Hoist

Shown here is the Jumbo Twin, a 7-ton truck body hoist for use with 1½ to 2 ton trucks, manufactured by National Lift Company. An outstanding feature of the hoist is the needle bearing pump, which weighs 37 pounds. It is fan belt driven, requires no power takeoff, and requires only 2 or 3 h.p. to raise its capacity load. Its dash controlled clutch permits the pulley to ride free, without driving the pump, when not in operation. The hoist is mounted by means of adjustable wrap-around type longbeams.

Circle No. 182 on Reader Service Card for more information
(Continued on page 144)

CA.V.U.*

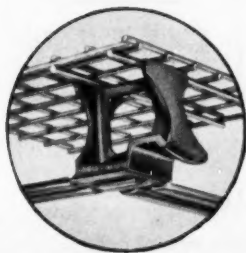
***CEILING AND VISIBILITY
UNLIMITED!**

Think of it! Layer upon layer upon layer of rugged, lightweight storage units . . . each with contents visible, identifiable at a glance!

With USP Palletainers you can literally "stack to the rafters." New malleable iron legs permit 8-way entry for truck forks; assure solid, totter-free grip on unit below. Because contents are always visible you don't spend inventory time climbing ladders. Special "Warehouse Palletainer" has hinged front, can be emptied while at bottom of stack!

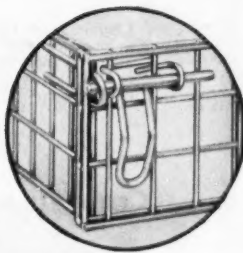
Palletainers cut your shipping costs, too. The virtually indestructible reinforced steel rod construction eliminates all damage in transit under normal conditions. Light weight of unit holds freight costs 'way down and empty Palletainers fold to 1/4 space for return trip.

For full information on Palletainers, including names and locations of current users, or for free consultation on Palletainer applications in your plant, write, wire or call today.



NEW malleable cast legs

Design offers even greater unit capacities, faster stacking plus a higher margin of safety. New leg design incorporates a wider throat to simplify alignment and stacking with lift truck. Legs are welded to bottom mesh and formed-steel bearing plates to form a supporting section that is practically indestructible.



NEW locking device

Holds Palletainer sides securely, regardless of load. Cannot be released accidentally, cannot be lost in shipment. Made of heavy formed-steel rod and conveniently located for fast, safe and simple release. Empty Palletainers can be folded flat for space savings and lower return shipment rates.



**UNION STEEL
PRODUCTS CO.**

Albion, Michigan

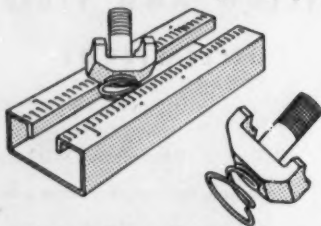
PALLETAINERS

1903 Our Golden Anniversary 1953

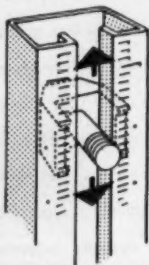
Circle No. 125 on Reader Service Card for more information.

Announcing **MULT-A-FRAME** framing material

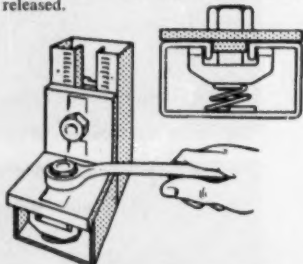
3 basic parts ... 3 easy steps



1. Insert Spring-T-Bolt in Channel Frame slot and give one-quarter turn. Bolt slips in anywhere along frame slot, eliminates costly layout work, welding and drilling. Bolt stem is long enough to hold easily in fingers when inserted. No time wasted in jockeying a bolt or nut.



2. Locate Spring-T-Bolt at desired position in Channel Frame. Can be easily moved by sliding in slot. Released, spring holds T-Bolt in place. Spring on bolt head forces contact points into Channel Frame serrations. Spring-T-Bolt can't slip or twist unless released.



3. Attach Safe-Locking Fitting and tighten nut. Result: a solid box-section joint combining great strength and rigidity with lightweight. End view shows firm locking action of Safe-Locking Fitting. Raised nubs "key" it into Channel Frame slot, prevents rotation, sideways or jackknifing.

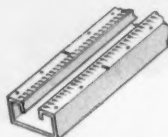
MULT-A-FRAME, amazing new fully-locking steel frame with 1000 and ONE uses, lets you frame, hang or support anything faster, easier, at low cost!

No matter what your field—industrial, electrical, construction or architectural, you can save planning time, man-hours, floor space and insurance costs with Ainsworth's exclusive new product, **MULT-A-FRAME**.

With just 3 basic units, **MULT-A-FRAME** provides skyscraper strength without bulk for pallet racks; skid racks; racks to hold pipe, wire, steel, glass, tires, barrels, sheet metal parts; lighting-fixture hangers; pipe, radiator and conduit supports; floor, wall and ceiling inserts; workbenches; scaffolds; platforms; rigs; cribs and mobile parts carriers.

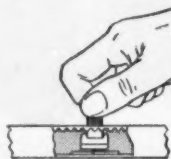
Only **MULT-A-FRAME**

SIMPLE TO MEASURE



Channel Frame has rolled-in dots to show inches, dashes to show feet. You can measure lengths quickly, accurately.

EASY TO HANDLE



Head of Spring-T-Bolt fits in frame. Shank extends, so workman can grip it easily without putting fingers inside channel.

Created exclusively
by Ainsworth...

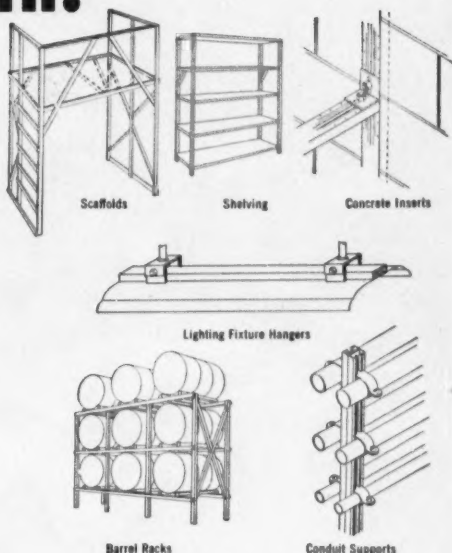
MULT-A-FRAME is a product of Ainsworth Manufacturing Corporation, for 37 years specialists in a wide range of stamped-metal products for the automotive industry, Government and other fields. Over the years, Ainsworth has grown to a total of 380,000 sq. ft. of floor space and over 2,500 employees. Instrumental in this growth is Ainsworth's reputation for quality and dependability—a sure sign that you can depend on **MULT-A-FRAME**, too!

Circle No. 134 on Reader Service Card for more information

... World's only fully-locking ... by Ainsworth!

MULT-A-FRAME requires no welding, drilling, special tools or special skills to construct, yet assemblies are designed to hold many tons. To meet varying demands, it is made in both Standard and Heavy-Duty Channel Frames. Completely salvable, **MULT-A-FRAME** can be used over and over again, assembled and reassembled without scrapping *any* part!

See how **MULT-A-FRAME** can be designed to fit your individual requirements, save you time and money! Authorized distributors in all principal cities provide engineering service and prompt delivery from warehouse stocks. Write, wire or phone for free samples and catalog to **MULT-A-FRAME DIVISION**, Ainsworth Manufacturing Corporation, Dept. 103, 2200 Franklin St., Detroit 7, Michigan.



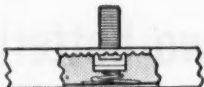
gives you all these advantages

FULLY ADJUSTABLE



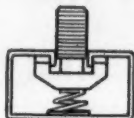
Both edges of channel slot are serrated. You get complete adjustability of fittings to suit any and all requirements.

SLIP-PROOF GRIP



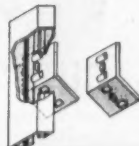
Spring-T-Bolt has contact points which lock into Channel Frame serrations when bolt is tightened. Result: a slip-proof grip.

BOLT PROTECTS FLANGE

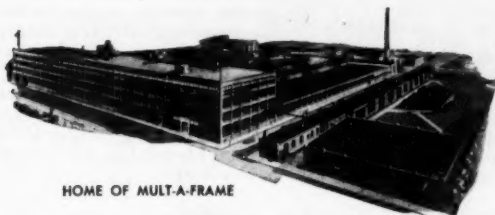


Edges of Spring-T-Bolt fit over and around flange. Danger of flange spreading, twisting or warping is eliminated completely.

FITTINGS KEY INTO FRAME



Safe-locking Fittings have raised nubs that key into Channel Frame slot, prevent rotation, sideways and jacking.



*Trade-mark.
Patents
Pending.

MULT-A-FRAME DIVISION
2200 Franklin Street • Detroit 7, Michigan

Ainsworth Manufacturing Corporation



TWO TRUCK BATTERIES ARE CHARGED AT SAME TIME USING G-E SEQUENCE CHARGE CONTROL AT BEECH-NUT PACKING COMPANY.

G-E Charger with Sequence Charge Control cuts costs; charges two batteries at once



MORE WORKING TIME for fork trucks like this one moving Beech-Nut baby food, when truck batteries are charged two at a time in working area.

"For our driver-ride lift trucks, I have proved that there is no finer equipment than G-E Metallic Rectifier Chargers," reports L. M. Spraker, Materials Handling Engineer, Beech-Nut Packing Co., Canajoharie, N. Y., "and I double the capacity of G-E Chargers with G-E Sequence Charge Control."

SAVES TIME, SPACE. You can charge two batteries at a time, and save valuable floor space as well, with G-E Sequence Charge Control. A competent electrician can attach it to any G-E Metallic Rectifier Truck Charger.

EASY TO INSTALL. Your trucks' power-consuming time is more productive when you install G-E Chargers right in your working areas. Installation is simple. No special foundations are needed.

LONG LASTING. Safety features prevent damage to charger and battery in case of power failure. G-E battery chargers last for years with virtually no maintenance.

FOR INFORMATION, see your nearest industrial truck representative, or write Section 463-8, General Electric Co., Schenectady 5, New York.

You can put your confidence in—

GENERAL  ELECTRIC

Circle No. 65 on Reader Service Card for more information

HERE'S WHY POWELL MATERIALS HANDLING EQUIPMENT LASTS LONGER.....

Double Construction at Joints Insures Against "Seam Splitting."

Lugs Designed to Seat Firmly - To Last the Life of the Box.

Heavy Coating of Tough Wear-Resistant Paint Evenly Applied.

Depth and Interval of Corrugations Give Maximum Strength.

Cut-Away Shows Standard Powell Flange Construction. Steel is Folded Back on Itself to Give Maximum Strength Where Wear is Heaviest.

Angle Crane Stacking Attachments Provide Safe, Secure Unit Tying.

Steel Channel Runners Give Boxes Sure Seating With Added Stability.

Offset Overlap Interlocks for Maximum Strength

Complete Individual Inspection is Made of Every Powell Container Prior to Shipment - They've got to be Right!

Only Prime Steels Are Used in the Manufacture of Powell Containers. Gauge and Alloy to Suit Job Requirements.

All Welds Are Fully Sufficient for Heavy Duty Service. No Tack Jobs!

Ruggedness of Strength Without Weight. Powell Design Unmatched in Any Other Container.

Powell Corner Lugs are Designed to Make Spotting Easy. Attached to Stay Put.

Dept. 233 **that's why it's always smart to SPECIFY**

THE POWELL PRESSED STEEL CO., HUBBARD, OHIO

ORIGINATORS OF ALL STEEL COLD FORMED MATERIALS HANDLING EQUIPMENT
(In Greater Youngstown)



Circle No. 69 on Reader Service Card for more information

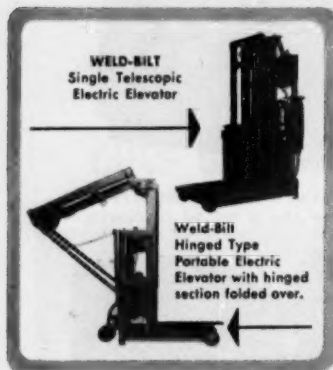
Weld-Bilt

MATERIALS HANDLING EQUIPMENT

*... Improves Production Profits
... Cuts Time and Labor Waste*

WELD-BILT PORTABLE ELEVATORS SIMPLIFY SPACE-SAVING STORAGE

WELD-BILT offers you today's most complete and versatile selection of Portable Elevators. Take your choice of single, double telescopic or hinged types, motor or hand operated, with sizes and designs to fit your needs exactly. They're available with all types of platforms, solid, roller, hinged, revolving, forked or special designs. Capacities, from 500 to 5,000 lbs.



Write or wire today for prices and catalogs — or for engineering assistance in making your handling more profitable.

Other Weld-Bilt Products Include: Tilt Trucks — Trailer Trucks — Package Trucks — Dump Trucks — Drum and Barrel Stands — Semi-Live Skids — Tying Machines — Pallet Skid and Drum Storage Racks and Specialized materials handling equipment, Dumb Waiters and Specialized Freight Elevators.

WEST BEND EQUIPMENT CORPORATION

Materials Handling Engineers

335 WATER STREET, WEST BEND, WISCONSIN

Circle No. 91 on Reader Service Card for more information

OTHER

"Weld-Bilt"
PRODUCTS

**PRODUCTS
TO INCREASE YOUR
MAN-POWER EFFICIENCY...**



**TWO-WHEEL
HAND TRUCKS**

Spring-Bearings for easier moving over rough floors.



**PALLET-TYPE HYDRAU-
LIC LIFT TRUCKS**

Handle single or double-face pallets up to two tons.



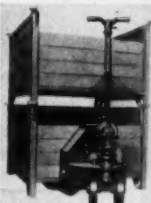
SKID PLATFORMS

Extra-strong, with replaceable floors, standard and special designs.



**HYDRAULIC LIFT
TRUCKS**

Built for longer life easier mobility.



TIERING BIN PALLET
In all sizes and capacities.



**SINGLE-STROKE
MECHANICAL LIFT
TRUCK**

A Quick-Lift Time Saver



**DRUM and BARREL
TRUCKS**



PLATFORM TRUCKS

Spring-Bearing Equipped for Product-Protection, Floor-Saving. In many types and sizes.



SKID and PALLET RACKS



DOCK TRUCKS

Spring-Bearing for easy moving.

for handling
practically any
materials...
from aggregates
to asparagus...



**Thermoid has
the right
conveyor belt
for your job**



From years of experience in materials handling problems, Thermoid has developed a full line of superior Conveyor Belting. Only the finest materials are used, scientifically compounded to withstand wear and carry the load dependably. This extra margin of endurance means fewer delays due to belt breakage or premature wear.

Whether you are handling boxes, bags, cartons . . . stone, sand, gravel or other aggregates—consult your Thermoid distributor. He can recommend the right type of Thermoid Belt to do the job at the lowest cost per ton of material moved. Write today for your copy of the Thermoid Conveyor Belting Catalog No. 3679.

Conveyor & Elevator Belting • Transmission Belting
F.N.P. & Multiple V-Belts • Wrapped & Molded Hose

Thermoid

Rubber Sheet Packings • Molded Products
Industrial Brake Linings and Friction Materials

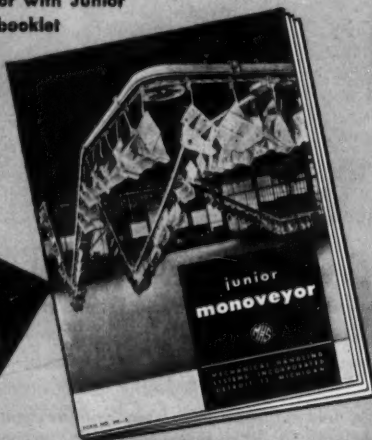
Thermoid Company • Offices & Factories: Trenton, N. J., Nephi, Utah



How to Build Your Own OVERHEAD CONVEYOR

You too can build your own light-duty, power-driven, overhead monorail conveyor with Junior Monoveyor. This 28-page booklet (Bulletin JM 2) tells you in detail how to make your layout, select the parts you will need and install them. All elements are fully illustrated—all sizes and capacities given.

**WRITE FOR
YOUR COPY
TODAY**



**Mechanical
Handling**

Systems, Inc.

4000 MARKET AVE. - DETROIT 13, MICH.
Offices in Principal Cities



Circle No. 120 on Reader Service Card for more information

Literature featured in ads

Lightweight Toting:

"Chem-Board," the chemically hardened corrugated board used by Convoy, Inc., in the manufacture of its lightweight tote boxes and record storage file cabinets, is described in literature available from the company. Various sizes, shapes and styles are available in the tote boxes to accommodate nesting and stacking where desired. They are said to go light on cost, too.

Circle 11 on Reader Service Card

Guaranteed Quality:

A bulletin describing hand trucks manufactured by American Pulley Co. is available upon request. American backs up its quality with a written five-year guarantee. Besides hand trucks the company makes barrel cradles and industrial wheels, about which literature also is available.

Circle 3 on Reader Service Card

Overhead Handling:

Bulletin No. C-120 may be obtained from Abell-Howe Co. describing complete crane installations. They include a wide range of motorized or hand operated cranes, runways, monorails, electric hoists, storage racks and accessories. Abell-Howe maintains its reputation has been bolstered by customers who call upon them for repeat installations during periods of expansion.

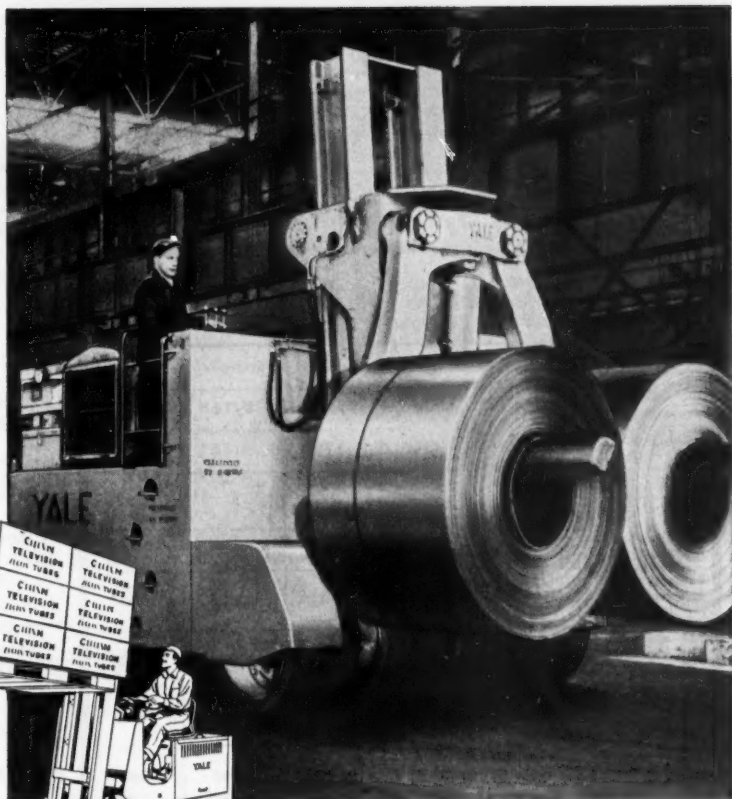
Circle 2 on Reader Service Card

"Bull Gangs" Eliminated:

Slow and costly handling by gangs of laborers is a thing of the past. The perfect answer for getting things in and out of your plant, according to Loudon Machinery Co., is the installation of

100,000
pounds
of steel

or
delicate
TV tubes



Yale Electric Trucks give you
the safer way to move more materials

No matter what your handling problems may be, you can solve them with YALE Electric Trucks. Industries of every kind...companies of every size...are cutting handling costs as much as 75% with YALE equipment and methods... saving time, work and manpower, too. Get one of the wide range of standard models in the capacity you need to become your plant's most versatile tool...or get special-

ized trucks or attachments for your specialized handling jobs. One or both... a single truck or a fleet...you'll get more maintenance-free, 'round-the-clock service with safer YALE TRUCKS.

YALE* MATERIALS HANDLING EQUIPMENT

*Registered Trade Mark

Gas, Electric, Diesel Lift Trucks • Worksavers • Hand Trucks • Hand and Electric Hoists • Pul-lifts,
Circle No. 113 on Reader Service Card for more information
FLOW • MARCH, 1953

MAIL THIS COUPON TODAY

The YALE & TOWNE Manufacturing Co., Dept. 43
Roosevelt Blvd. and Haldeman Ave., Phila. 15, Pa.

Please have your local representative
call for an appointment.

Company _____

Name _____ Title _____

Street _____ City _____ State _____

In Canada write: The Yale & Towne Mfg. Co.,
Box 337—Postal Station "A"—Toronto

Here are the facts!



The factual comparisons below show why you'll get longer, better service with Rapistan Cold-Forged Industrial Casters than with any others of comparable price.

YOU BE THE JUDGE

MAKE THESE COMPARISONS YOURSELF	RAPISTAN Cold-Forged Series 40	CASTER A	CASTER B	CASTER C	CASTER D
		<small>Letters represent leading makes of stamped steel casters.</small>			
Method of construction	Cold-Forged	Stamped	Stamped	Stamped	Stamped
Thickness of top plate	1/4"	3/16"	3/16"	3/16"	3/16"
Thickness of caster legs	3/16"	1/8"	1/8"	1/8"	1/8"
Number of raceways—rows of ball bearings	2	2	2	2	2
Smoothness of raceways	.0007"	.0023"	.0030"	.0016"	.0017"
	<small>Figures represent degrees of roughness measured to .0001"</small>				
Ball-bearing surface contacting top plate raceway	.120"	.005"	.030"	.030"	.005"
Ball-bearing surface contacting yoke raceway	.100"	.070"	.030"	.005"	.005"
Protection between wheel-hub and yoke leg	Case hardened, thrust washer	None	None	None	None
Shape of bolt hole for use with previous spacings	Slotted for flexibility	Round	Round	Round	Round

Extra-thick top plate and yoke legs

Two full rows of ball bearings

Hyatt-type wheel bearings

Zerk lube fittings

Hardened outer raceway for wheel bearings

Slotted bolt holes

"Coined" raceways... harder and smoother

"Contour Contact" of bearings on raceways... more surface contact for better load distribution

Case hardened thrust washer

Six wheel types... sizes from 3 1/2" to 8"

NOTE: Rapistan also makes a complete line of outstanding steel forged casters for unusually heavy work.

GET ALL DETAILS on Rapistan caster superiority from this illustrated catalog packed with specifications, ideas and suggestions, including recommendations for special applications. No charge, no obligation. Write today for catalog and name of nearest distributor.



Rapistan®

FASTEST GROWING NAME IN CASTERS

The RAPIDS-STANDARD CO., Inc., 85 Rapistan Bldg., Grand Rapids, Michigan

Circle No. 42 on Reader Service Card for more information

AD LITERATURE

Continued

a Loudon Overhead crane. A free illustrated book describing case histories in which Loudon handling systems have saved time and money for widely different kinds of industry is available upon request.

Circle 62 on Reader Service Card

Fit Your Own Needs:

A 24-page catalog No. 600 illustrates 46 different kinds of racks that can be built with Unistrut metal framing. Pallet racks and storage racks may be assembled to fit the particular needs of your own warehouse, according to Unistrut Products Co. They are said to increase storage space, speed order filling and reduce damage to goods. With simplified engineering installation can be made without special tools, drilling nor welding.

Circle 54 on Reader Service Card

More Power to You:

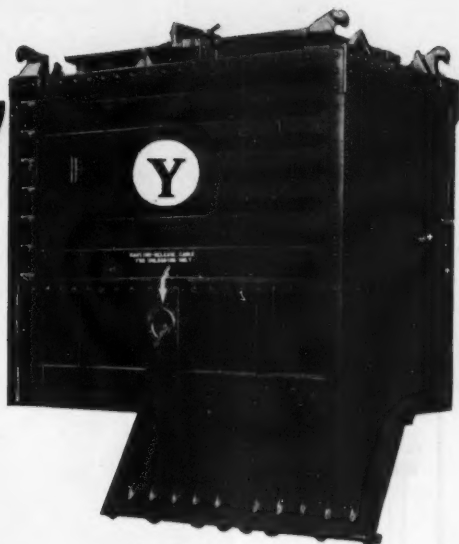
Power overloads can shut down machinery and create costly damages unless some means of positive overload protection is provided. Automatic mechanical units manufactured by John Waldron Corp. make use of increasing torque to control the operation of machinery. They are said to protect horsepower and save time losses caused by sheared drive pins. Their new catalog No. 51 provides full information, sizes, ratings and other engineering data on both the coupling and pulley types.

Circle 57 on Reader Service Card

No Weighty Problem:

United States Rubber Company's tough lightweight molded plastic Royalite is proving advantageous wherever industry finds a weight problem. They have available literature describing how the product can be molded into tote boxes, assembly tote trays, parts handling trays and a wide variety of other uses. The material, be-

6 Good Reasons



WHY YOU SHOULD BUY YOUNGSTOWN CONTAINERS

*for Intra and Inter-plant
handling of bulk materials
and for L.C.L. shipments in freight cars and ships*

1. EASE OF OPERATION

The single hinged door of Youngstown Containers is positively and securely locked when closed. Easy release of the door and quick and complete discharge of the load are obtained by a gentle pull of the release cable. The discharge door is automatically locked when it swings closed and inspection for locking before loading the container is unnecessary. This saves you time and money.

2. VERSATILITY

Youngstown Containers can be handled by lift truck or single drum hoists. Double drum hoists are not required. These containers can handle castings with the same facility as sand, sea coal, bentonite and coarser materials.

3. SAVINGS IN HANDLING COSTS

Youngstown Containers can be moved directly to the points where material will be used and

unloaded on the spot. No intermediate handling is necessary and no dumping into storage bins for later use is required. Thus handling costs are substantially reduced.

4. ADAPTABILITY

Youngstown Containers are carefully engineered, can be adapted to your requirements.

5. CAPACITY AND WEIGHT

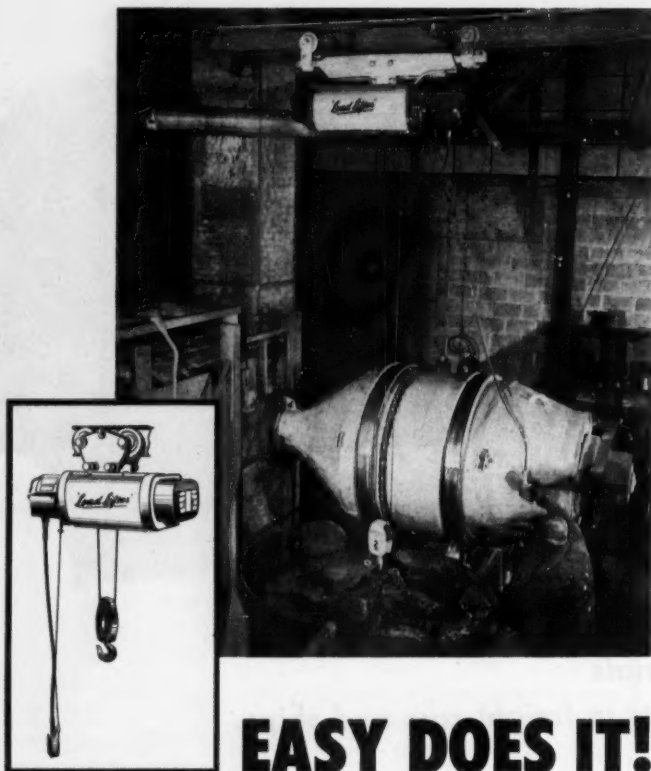
Youngstown Containers give you the largest capacity to weight ratio of any container of this type.

6. STRENGTH AND WEIGHT

Youngstown Containers possess the greatest strength per unit of weight of any container of this type. Long life and overall economy is thus assured.

THE YOUNGSTOWN STEEL DOOR CO.
Camel Sales Company • Camel Company Limited
CLEVELAND • CHICAGO • NEW YORK • YOUNGSTOWN

Circle No. 141 on Reader Service Card for more information



EASY DOES IT!

'Load Lifter' SPEEDS TOUGH HANDLING

THE "SERIES 700" 'LOAD LIFTER' HOIST is the one electric hoist you can depend on for continuous service to keep defense and civilian production on the move. It's a heavy-duty hoist, built for 3-shift lifting every day in the year.

IT'S FAST AND ECONOMICAL — Shortens handling time — lifts a ton 30 feet a minute. Costs go down when the 'Load Lifter' does all the heavy work.

IT'S TOUGH AND SAFE — The 'Load Lifter' has every feature to safeguard man, load and hoist. Only 24 volts at the push button. Powerful motor and load brakes that act simultaneously. Steel suspension. No exposed wiring. Over-capacity load hook.

IT'S BUILT TO LAST — Heat-treated helical gearing provides greater strength. Ball bearings throughout minimize frictional wear. The 'Load Lifter' is constructed with few parts to assure trouble-free service.

SAVE IN YOUR PLANT — Wipe out muscle strain and maintain worker efficiency. Give your production a lift at the same time. 'Load Lifter' capacities range from 1/2 ton up. Ask your "Shaw-Box" Distributor for details or write for Bulletin 399.



'Load Lifter' ELECTRIC HOISTS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" and "Load Lifter" Cranes, "Budgit" and "Load Lifter" Hoists and other lifting specialties. Makers of "Ashcroft" Gauges, "Hancock" Valves, "Consolidated" Safety and Relief Valves, and "American" Industrial Instruments.

Circle No. 24 on Reader Service Card for more information

AD LITERATURE

Continued

sides being light and tough, is said to be impervious to oil and acid, has low heat conductivity and is stable under changing atmospheric conditions. It also can be molded to the customers specifications.

Circle 56 on Reader Service Card

The "Air Age":

Sixty informative pages on air-tube systems have been prepared by Lamson Corp. giving profitable ideas for using pneumatic tubes in numerous applications. The book includes dimensional drawings, architects' data, typical installations and case histories, all designed to bring you up-to-date on this method of relaying messages and materials from one department to another throughout the plant.

Circle 52 on Reader Service Card

For Those Heavy Jobs:

For complete detailed information on their 20-ton yard crane, Osgood-General has prepared literature available on request. It explains how the crane can be quickly converted to a Shovel, Hoe, Clamshell or Dragline. Featured in the unit is a torque converter and foot throttle, both designed to step up efficiency of operation.

Circle 38 on Reader Service Card

Bearings Carry The Load:

Descriptive literature available from Metzgar Co. points toward lifetime operation wherever Metzgar gravity conveyors have been installed. Steel ball bearings keep the conveyor wheels spinning and carry the load with minimum wear, the company maintains.

Circle 33 on Reader Service Card

It's Speedy Handling:

Manning, Maxwell & Moore, Inc., has prepared bulletin No. 399 explaining the ease and speed with which electric hoists accomplish



WEBB

Conveyors

- ✓ Increase Production Efficiency . . .
- ✓ Improve Shipping Schedules . . .
- ✓ Reduce Handling Costs . . .

for

Refrigerator Manufacturer

This efficient Jervis B. Webb conveyor system for mechanically and automatically handling refrigerators and freezers in a well known manufacturer's large warehouse has eliminated previous storage and shipping problems. Warehouse has storage capacity of 130,000 refrigerators and a shipping capacity of 100 cars per day.

The conveyor system basically is a roller type main distribution conveyor with an automatic dispatch chain running the length of the warehouse, and 10 cross conveyors which extend from it to the shipping dock. To permit preloading of each cross conveyor with a complete carload of refrigerators or freezers, a gravity transfer switch is installed at the point where conveyor divides as illustrated in sketch.

Proper application and skillfully engineered installation of roller conveyors, belt conveyors, roller flight conveyors, electronic eyes, limit switches, transfer switches, etc., assure positive control for automatic movement of refrigerators and freezers. Approximately 600 tons of conveyor material were installed to provide a complete system that will automatically dispatch 7 units per minute to any predetermined storage point in the 320,000 sq. ft. warehouse or to any of the 20 loading stations on the shipping dock.

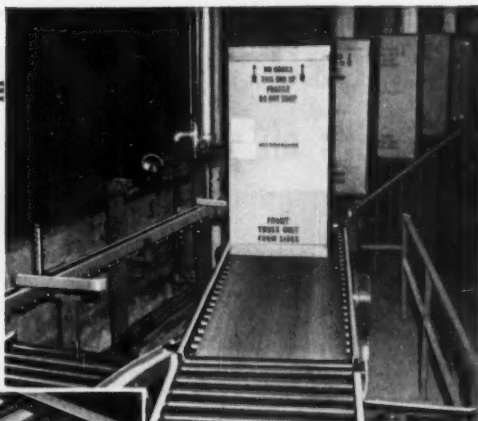
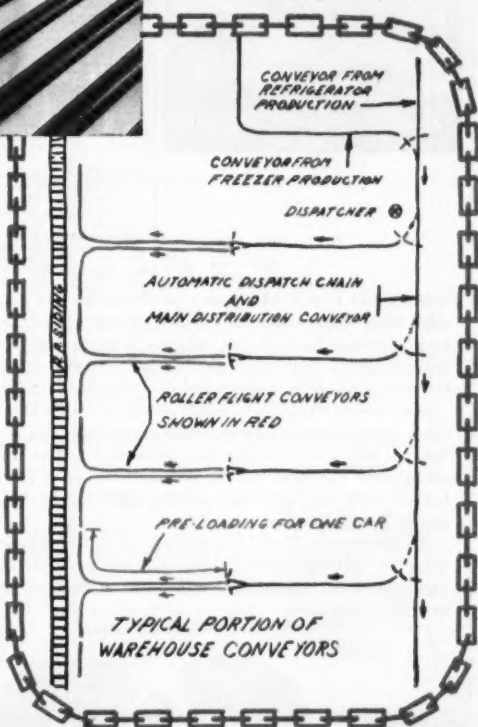


Photo to left—rollers, steel slats and Webb rivetless chain construction of Roller Flight Conveyors



JERVIS B. WEBB CO.

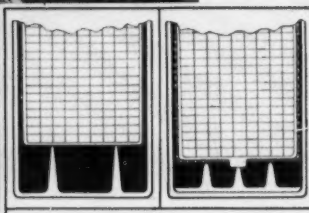
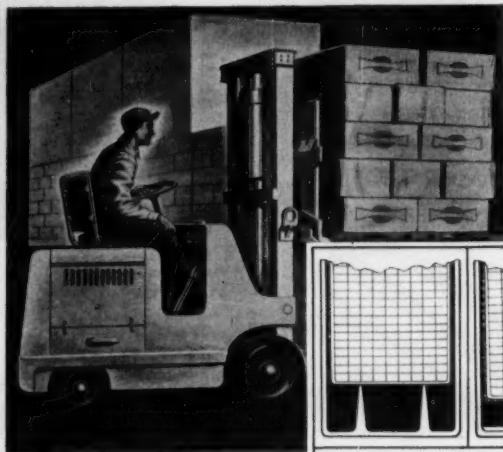
Conveyor Engineers and Manufacturers

3335 ALPINE AVENUE • DETROIT 4, MICHIGAN

Send for fully illustrated catalog that provides complete information on Webb floor type conveyors.

OFFICES IN PRINCIPAL CITIES • FACTORIES IN DETROIT, LOS ANGELES, HAMILTON, ONTARIO

With C&D Slyver-Clad* Batteries it's all work and no play



COMPARE THEM! At left: an ordinary battery with large, unproductive sediment space and integrally molded supporting ribs. At right: a C&D Slyver-Clad showing longer, power-producing plates. Separate rib plate in new double bottom design distributes battery weight evenly over jar base. Negative plates rest on separate center rib.

With C&D Five-Fold *Slyver-Clad* Batteries you get full shift operation with your Electric Trucks. Their added capacity provides ample power for a heavy duty cycle under all power consuming requirements. And the high capacity and sustained voltage characteristics provide maximum desirable truck speeds for the duty cycle.

This added capacity is made possible by C&D's Five-Fold *Slyver-Clad* method of insulation and retention. The active material is held in place on the positive grid, and sedimentation is virtually eliminated. Normal battery sediment space is reduced, permitting longer and heavier plates, giving from 10 to 30% more capacity in the same size tray.

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BATTERIES, INC.

OF CONSHOHOCKEN, PA.
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AD LITERATURE

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tough handling jobs. It also gives complete details on the Series 700 load Lifter which comes in load capacities of one-half ton on up.

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You get **EXTRA** advantages with

LO-HED HOISTS

DESIGNED to operate with top speed and ease... built for longer working life... Lo-Hed Hoist has cut material handling costs in plants from coast to coast.

And beyond that, Lo-Hed has *extra* features that bring maximum safety and efficiency. Its bottom block, for example, is completely shrouded. On A.C. installations a transformer puts 110 volts instead of line voltage at the push button controls. Its hook is suspended on an oil-impregnated bearing that does away with tangled lines.

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Lightweight U. S. Royalite

Turns Pounds to Ounces...Cuts Handling Costs!

Where weight is a problem, consider U. S. Royalite. Thousands of manufacturers across the country have discovered that this lightweight yet tough plastic is a perfect solution.

For easier, more efficient materials handling, tote boxes molded of U. S. Royalite weigh much less...wear much longer...speed up production line operations.

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HOW TO SQUEEZE MORE DOLLARS OUT OF YOUR PRODUCTION BUDGET



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"Thirty"—
America's Finest
Industrial
Truck Battery

- There are two sure ways to make your production dollars go farther:
- 1) Power your industrial trucks with Gould "Thirty" Batteries;
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GOULD-NATIONAL BATTERIES, INC., TRENTON 7, N. J.

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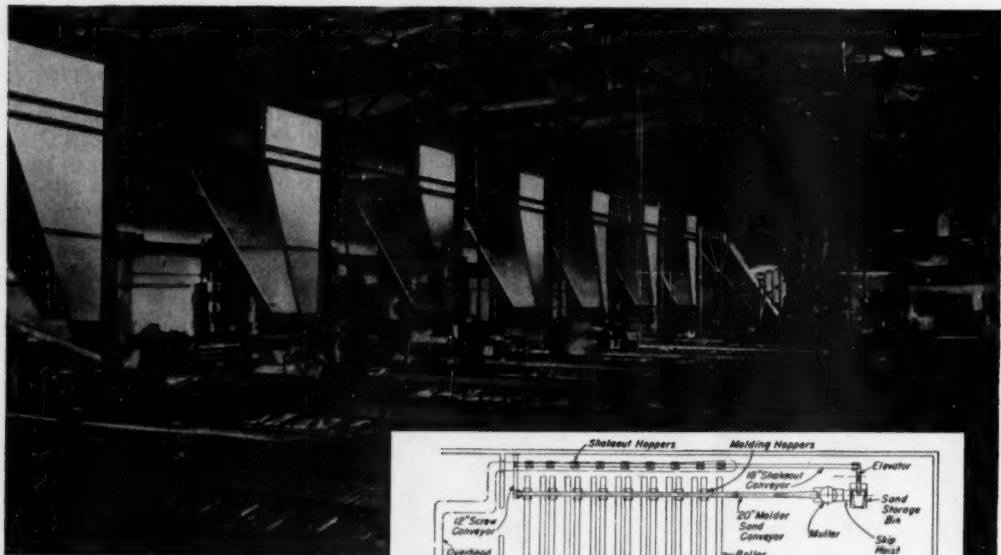
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engineered materials handling

8 WAYS BETTER

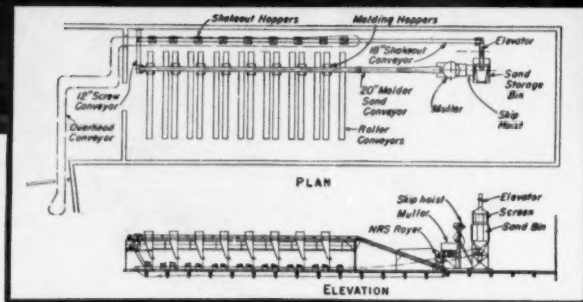
FOR CHASE BRASS & COPPER CO., INCORPORATED



In the foundry operation of Waterbury Manufacturing Co. — a division of Chase Brass & Copper Co., Incorporated — Gifford-Wood has engineered eight major improvements in the handling of molding sand, molds, and castings into the new materials handling system. These improvements, brought about by the G-W system include —

1. Consolidation of two foundry rooms into one.
2. Higher production through more efficient space use.
3. One casting method replaces two formerly used.
4. Virtually all manual handling has been eliminated.
5. Casting quality has been increased.
6. Working conditions are considerably better.
7. Maintenance costs have been reduced.
8. Over-all production time has been cut sharply.

This is but one of the more recent materials handling problems solved by Gifford-Wood. For more than 140 years, G-W has designed, built, and installed similar complete systems for nearly every industry in the book. This experience is at your disposal.



A 20'-wide overhead conveyor moves molding sand past molding hoppers where operators remove it as needed by a lever-operated diverting plate. A 12" screw conveyor transfers unused sand laterally to an 18" shakeout conveyor at which point used sand collected from the molders in shakeout hoppers is added. A bucket elevator then dumps it into a storage bin from which it is skip-hoisted to a muller for mixing with new sand. After aeration and cooling it is deposited on the original belt for re-use. Roller conveyors handle molds at molding stations, and castings move to finishing on overhead monorail conveyors.

For details on this and many other G-W installations, ask for Materials Handling Catalog.

When You Think of Materials Handling—Think of

GIFFORD-WOOD CO.

Since 1814 • Hudson, New York

NEW YORK 17, N. Y.
420 LEXINGTON AVE.

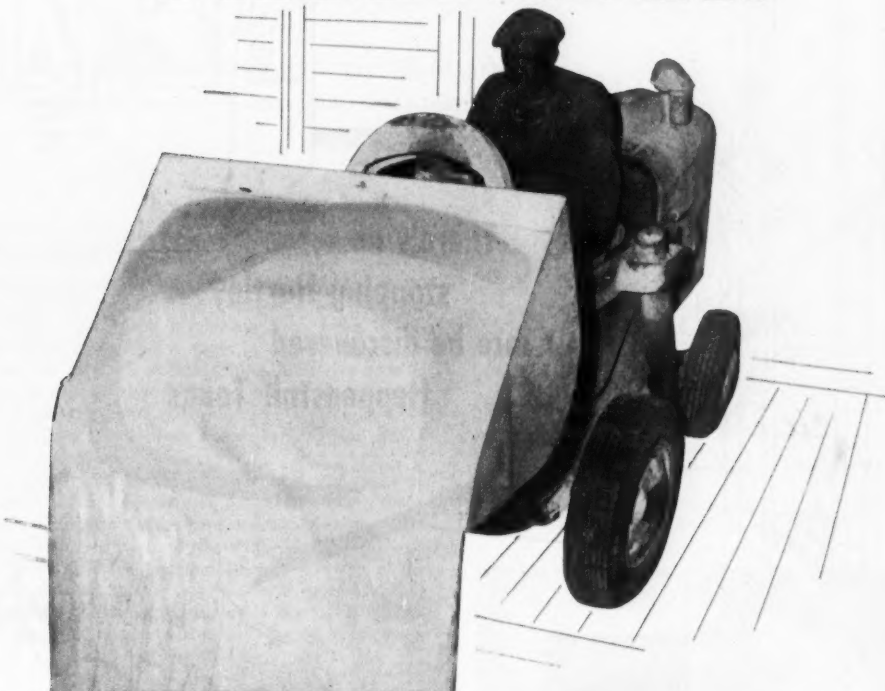
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FLOW • MARCH, 1953

PAYLOADER



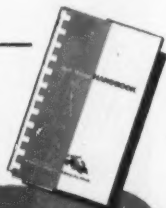
For Fast, Flexible **BULK-MATERIAL** *Handling!*

"PAYLOADERS" spell flexibility and low-cost in the handling of fertilizers, chemicals and other loose, bulk materials. And these tractor-shovels can go to work cutting handling costs *right away*. No expensive investment or plant rearrangement is required before you begin reaping "PAYLOADER" benefits. They travel swiftly indoors and out and maneuver in close quarters. They scoop-up, carry, load, dump, spread . . . lift and lower . . . push and pull. They load and unload boxcars of bulk. In fact,

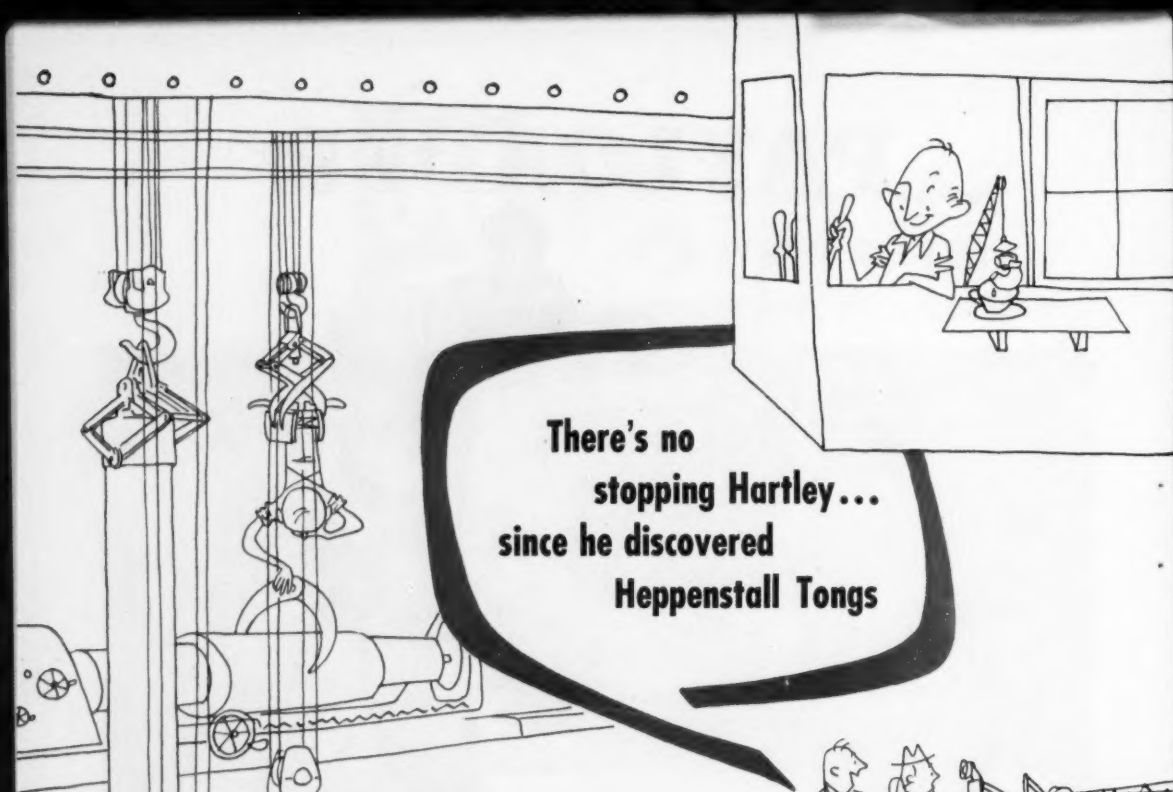
"PAYLOADERS" are being used for so many jobs in so many plants that they can probably cut handling costs for you too. Get all the facts from your "PAYLOADER" Distributor or write The Frank G. Hough Co., 731 Sunnyside Ave., Libertyville, Illinois.

FREE HANDBOOK

Tells how and where to look for signs of inefficient bulk-materials handling . . . how to analyze, organize and set up an efficient handling system. Plus many useful tables and data. Write for "Bulk Materials Handbook."



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**There's no
stopping Hartley...
since he discovered
Heppenstall Tongs**



**There's no limit to the
range of jobs that**

HEPPENSTALL SAFE-T-TONGS
handle quickly, safely, economically

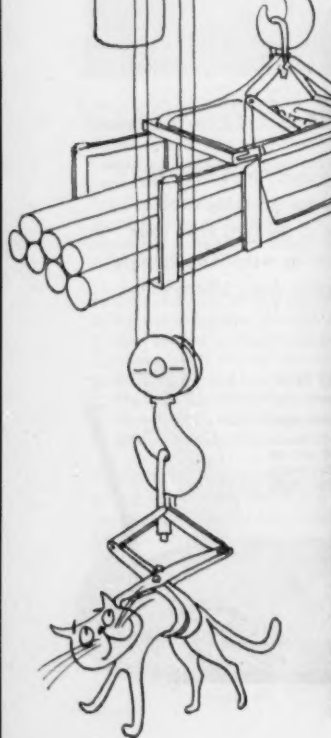
Whatever your handling job requires—regardless of shapes, weights, or sizes—a Heppenstall Safe-T-Tong engineered specifically to your needs will help you speed materials handling operations with greater efficiency and safety. Call Heppenstall *now*. Obtain complete information and technical assistance. Heppenstall Company, Pittsburgh 1, Pa. Sales offices in principal cities.



Heppenstall

... TONGS FOR EVERY GRABBING PROBLEM

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If your problem involves the raising, lowering or work positioning of materials, there may be a ready answer through . . .

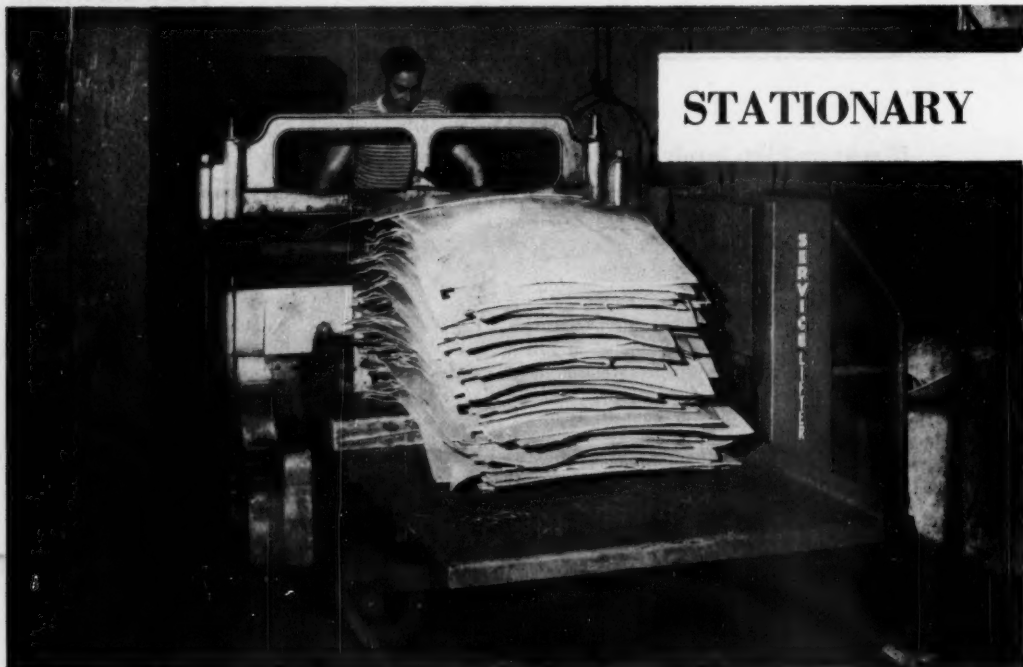
STATIONARY lifts, when used correctly, can provide answers to an amazingly large number of lifting problems in your plant. Your primary problem might be one of lifting material only several inches (to equalize ground and dock heights, or floor levels of adjoining buildings), or it might be one which requires a method for high volume lifting from one floor to another where space might be limited. Perhaps you are faced with a difficult problem of positioning work at machines to eliminate excess bending and lifting of heavy material by operators.

In this article, FLOW has illustrated and described about a dozen different uses for these valuable material handling tools. All of the devices shown are available from manufacturers who will gladly discuss your problems with you and then help in selection of the lift best suited to your operations. If necessary, they can adapt standard models to suit special conditions which might be encountered. Be sure to let us know

Stationary Platform Lifts

CONSTANT WORKING HEIGHT is assured by this stationary lift installed in conjunction with roller conveyor system. Castings are placed on lift at floor level. Operator controls level of lift with floor switch and shunts container onto conveyor after load is finished.





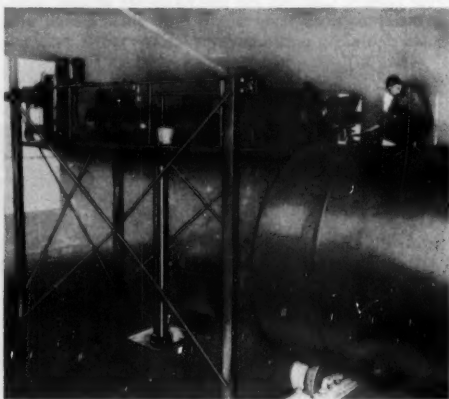
STATIONARY

TWENTY FIVE PERCENT INCREASE in daily production resulted from the use of a stationary lift at this leather manufacturer's plant. Formerly, large pieces of leather, called bends, were piled on table in front of

stripping machine. First bends from pile were difficult to position, and sharp angle of cut caused inaccurate stripping and waste. Now, as pile goes down, lift platform comes up, keeping work level.



ADDITION OF SKIRT to hydraulically operated stationary lift adapts it for outdoor use. In tight alleys, etc., lift can be used in place of a permanent loading dock to eliminate time-consuming jockeying of trucks and trailers to get them into position for loading.



POSITION WELDING on kiln sections is accomplished by raising all necessary apparatus to welding level on stationary lift. After operator has positioned lift platform at correct height, he moves welding machine over the kiln section. Note corner supports.

PLATFORM LIFTS

if you can use any additional information on any of the equipment covered.

Basically, there are three types of stationary lifts available to industry. They may be constructed with two or four posts (uprights) and may be either hand or electric powered, or they may be hydraulically operated lifts.

Two-Post Lifts

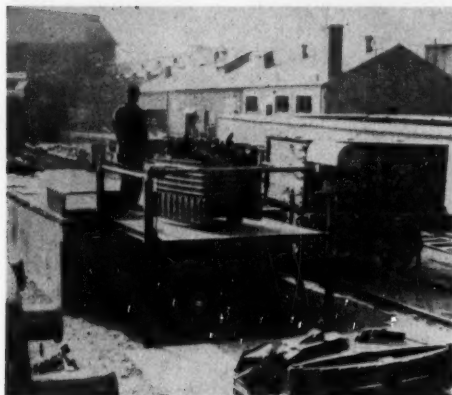
An excellent tool for smaller lifting jobs is the hand-powered or electric powered two-post lift. It can be installed in congested areas with a minimum of trouble, and usually handles loads up to about 4000 lbs. with safety. Applications like the following are becoming more commonplace daily. . . .

A manufacturer of leather soles for shoes receives leather in large pieces called bends. The first operation in the manufacture of soles is to cut the bends into strips with a machine called a stripper. Formerly, bends were placed on a table in front of the stripper 50 to a pile and the operator would be required to pull a bend from the pile and place it in position under the cutting blade. When the pile was full, bends were hard to position under the cutter blade due to a downward slope from pile to stripper. As a result, the

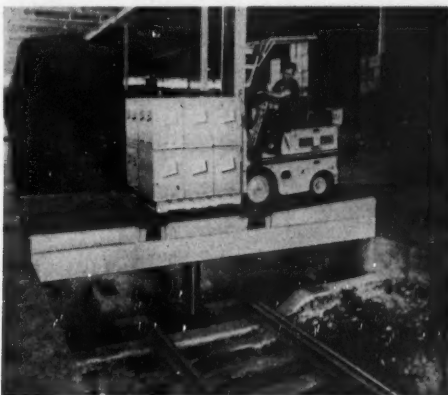
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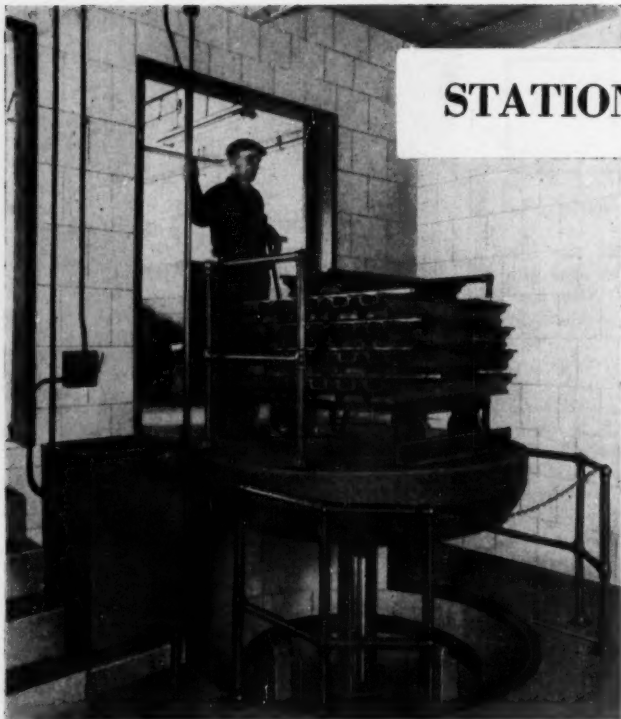
CASTERED LOADS make the jump from below-ground-level floors with minimum of effort. Only one operator is required to move this load on and off the lift. Note tapered edges of the lift platform. Design reduces danger of crushed toes by pushing foot away.



OUTDOOR INSTALLATION of four-post stationary lift is used by railroad repair yard to raise skid loads of repair parts to level of service car. Platform truck is used to transport loaded skids. Controls for lift are in upper right hand corner in photo.



RAILS RECESSED IN TRANSFER BRIDGE make this lift ideal for use between two docks split by railroad siding. Bridge rests on concrete bumpers in pit to support railroad cars. Dual hydraulic jacks should be used for wide bridges, long spans, heavy loads.

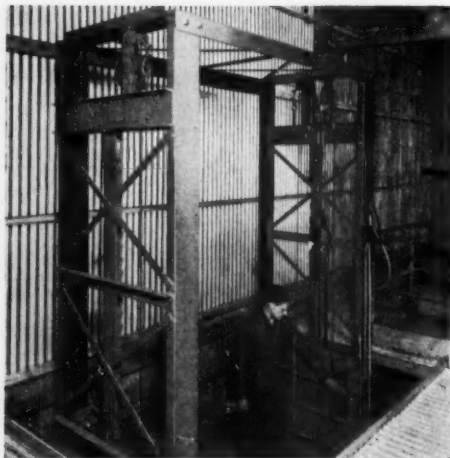


STATIONARY PLATFORM

TURNABLE USE of stationary lift helps to solve two space problems. The load is manually rotated 180 degrees as it travels up to higher floor. Area on either floor which might otherwise have to be used for turning, is devoted to storage.



SCRAP HANDLING can be expedited with specially designed stationary lifts as shown here. Cuttings from paper cutter drop into bin fastened to platform of lift. When full, bin is raised and automatically tilted to dump into hopper mounted on industrial truck.



FLOOR-TO-FLOOR use of electrically operated four-post stationary lift for serving the laboratory in tin plate mill of a large steel plant. Control is by push-button manipulated by riding operator as shown. Space required for installation of this lift is relatively small.

LIFTS....(cont.)

manufacturer was plagued with inaccurate stripping and waste. The average number of bends stripped per day with this system was 600, and it was necessary to reload the table 12 times per day.

A two-post electric powered lift was installed in place of the table. With its platform in lowered position, the lift permitted loading of 120 bends with the top bend directly in line with the cutting block of the stripper. As the bands are used, and the pile grows smaller, the lift platform is raised by a foot operated control, thus leaving the operator's hands free. The bend at the top is always in line with the cutting block.

The average number of bends stripped per day has been increased by 150 since the installation of the stationary lift. Instead of requiring 12 loadings per day as was the case with the table, only six loadings are now required. One of the most important benefits, of course, is the improvement in working conditions.

Four-Post Lifts and Hydraulic Lifts

There is practically no limit to the applications possible with different types of lifts. Adaptations are avail-

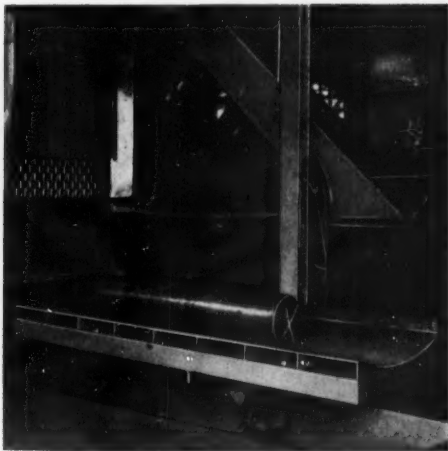
(Continued on page 135)



STATIONARY LIFT FUNCTION is performed here by portable elevator. The elevator automatically opens the trap door as it rises through the floor. This unit is powered by an electric motor, and the transporting job has been reduced to a one-man operation.



ROLLS OF PAPER are moved from rollers at near edge of platform where wrapping paper has been applied to circumference of roll. Then, roll is pushed onto platform of stationary lift and lowered. Automatic tilt operates to discharge roll to next work area.



REJECTED ELECTRODES weighing about 2000 lb. are fed into crushers for re-processing at Speer Carbon Co. They are placed on concave platform of hydraulic lift, which, when raised, tilts end farthest away from crusher to slide electrode into the machine.

Everybody Gains When . . .

Unit Counts Are Standardized

Substantial savings in handling costs result when standard package quantities of small parts are established for an industry. L. R. Michelsen*, of the American Gas Association tells how it's been done in his field.

Burdened for years with increasing costs of handling, storing, disbursing, and inventorying materials, the gas industry has done something about it.

Like many other industries, it faced mounting expenses due largely to the lack of uniformity in sizes, kinds, and methods of packaging materials. The problem was especially pressing in the case of smaller items which are used in large quantities—pipe fittings and nipples two inches and less in diameter. So, The American Gas Association appointed a sub-committee to its Purchasing and Stores Committee to study the industry's handling problems and come up with some recommendations. The sub-committee found the most bothersome conditions to be:

1. Barrels or drums often contained several different types of fittings.
2. Burlap bags were loaded with several sizes of nipples.
3. Boxes and/or kegs held different sizes and kinds of fittings.
4. There was lack of uniform count in containers.
5. Containers were of excess weight.
6. Materials were poorly identified.

To report receipt of fittings under these conditions, it was necessary for men to unpack, sort, count, and repack the contents in suitable containers or bins.

Companies without mechanical equipment experi-



BEFORE: Burlap sacks were loaded with irregular counts of several fitting sizes so that men had to sort, count and repack contents—hard, hazardous work.



AFTER: Large numbers of standard packages, each containing the proper quantity of a given item, are easily carried by fork truck to storage racks.



THE MANUFACTURER finds standards reduces number of cartons required, speed filling operations.



THE WHOLESALE, handling "Master Cartons" of multiple packages, keeps accurate stock control.



THE RETAILER can offer his customer a reasonable supply of any fitting in a handy package.

enced great difficulty handling the irregular shapes and sizes of containers, and the excessive weights of containers often caused physical accidents to individuals. Storage areas were not efficiently utilized, and good housekeeping was all but impossible.

Disbursing of materials was slowed considerably by the assortment of container shapes and sizes and the necessary counting at the time of issue. Inventorying was quite a task, necessitating considerable handling to make proper identifications.

The sub-committee was of the opinion that the following advantages could be obtained by the adoption of standard packages.

Saving of Storage Space A number of companies were adopting, or had adopted, some form of mechanical handling equipment to aid in the utilization of more cubic area of any building or space. If fittings were in standard packages, greater use could be made of the space occupied.

Saving of Handling Time If packages of fittings were of standard count, the necessity of unpacking odd size containers to facilitate disbursement would be eliminated.

Saving of Inventory Time Packages of standard count would simplify and speed up count at inventory time and when spot checks are made.

Accuracy Fewer errors in counting in the receiving, disbursing, and inventorying of pipe fittings would be experienced.

Safety Proper weights would aid in accident elimination.

The sub-committee consulted with not only the gas industry but also some of the manufacturers of fittings, distributors, and trade associations.

Interviews held with various manufacturers and others were, in most instances, encouraging and reassuring to the committee that there was a need for up-to-date methods of packaging fittings.

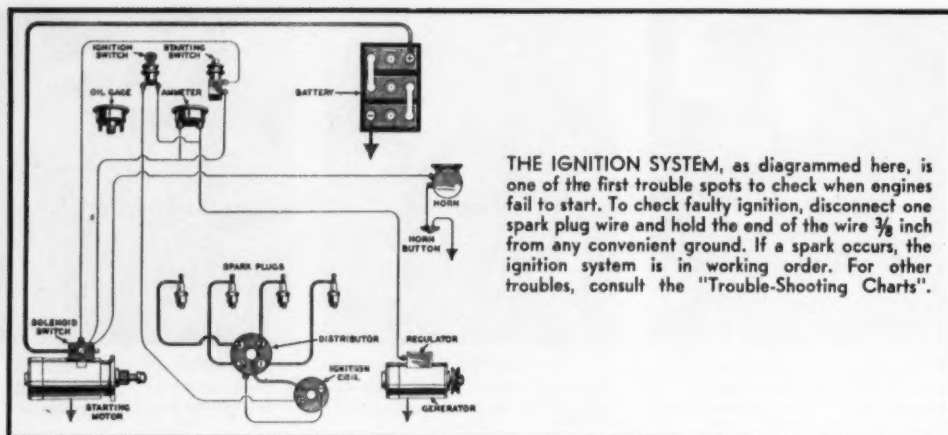
Then, the sub-committee held a meeting at which

representatives of the pipe, nipple, and fitting manufacturers were present to discuss a recommendation as to the number of pieces to be packaged per carton. The recommendation was proposed in the belief that not only would the gas industry benefit from the adoption of such a program but that other industries as well could also share in the advantages outlined. While there were some differences as to the count per package recommended by the sub-committee and that suggested by some manufacturers, these were amicably resolved and the program jointly recommended.

(Continued on page 135)

QUAN.	SIZE	IN SHIPPING CONTAINER			QUAN.	SIZE	IN CO.
		CARTONS	TOTAL Pcs.	WT.			
90° ELBOWS					TEES		
30	1/2	12	360	69	30	1/2	6
30	3/4	6	300	89	40	3/4	6
35	1	6	210	101	35	1	4
30	1 1/4	6	120	93	20	1 1/4	3
20	1 1/2	3	60	74	15	1 1/2	4
12	1 3/4	3	36	58	10	2	3
8	2	3	24	53	10	2	3
25	3/4 x 1/2	24	600	88	35	3/4 x 1/2	12
30	3/4 x 3/4	12	360	72	35	3/4 x 3/4	6
50	3/4 x 1	6	300	74	30	3/4 x 1	6
30	3/4 x 1 1/4	6	180	61	35	3/4 x 1 1/4	4
30	3/4 x 1 1/2	6	180	72	35	3/4 x 1 1/2	4
25	1 x 3/4	6	150	78	35	1 x 3/4	4
20	1 x 1	6	120	81	20	1 x 1	4
15	1 1/4 x 1	6	90	68	20	1 1/4 x 1	4
10	1 1/2 x 1	6	60	55	15	1 1/2 x 1	4
12	1 3/4 x 1	4	48	46	25	1 3/4 x 1	4
12	1 1/2 x 1 1/4	4	48	53	30	1 1/2 x 1 1/4	4
12	1 1/2 x 1 1/2	4	48	54	30	1 1/2 x 1 1/2	4
12	2 x 1	3	36	59	30	2 x 1	4
10	2 x 1 1/4	3	30	56	15	2 x 1 1/4	4
10	2 x 1 1/2	3	30	68	15	2 x 1 1/2	4
45° ELBOWS					14	1 1/4 x 1	4
40	1/2	12	480	92	8	1 1/2 x 1	6
50	3/4	6	300	83	10	1 3/4 x 1	4
40	1	6	240	103	10	1 3/4 x 1 1/4	4

SECTION of a manufacturer's catalog sheet shows few of the quantity standards adopted by gas industry. Numbers of packages per carton are also standard.



Maintenance of Gasoline Engines

USED IN MATERIAL HANDLING EQUIPMENT

MINOR repairs and adjustments performed in time can often prevent larger, more costly repairs or major overhauls. Since the majority of gasoline engines used in material handling equipment are of the 4 or 6-cylinder, 4-stroke cycle design, maintenance and trouble-shooting operations are similar to those for automobile engines.

A good rule for the operator and maintenance crew to follow in locating engine trouble is to never make more than one adjustment at a time. Probable causes of any irregular operation should be determined, and the trouble should then be located by a process of elimination. Usually, the cause is a simple one, rather than some mysterious and complicated one.

An operator's responsibility in maintaining engines should not be overlooked. The operator is more familiar with his equipment than anyone else. He is in the best position to detect changes or irregularities in performance, and he should report these to the maintenance department at once.

Oil Grade Selection

Proper lubrication is one of the most important factors in avoiding unnecessary repairs. Engines should be lubricated at the times specified by the manufacturer, and with the grade of lubricant recommended.

Engine design, the service it performs and the prevailing atmospheric temperatures in which it operates are factors which determine the body and character of the lubricating oil required to assure maximum performance with minimum costs for supplies, adjustments, repairs and replacements.

Engines which are used for material handling and industrial purposes generally involve a wide field of operating conditions. Therefore, lubricating oil recommendations have been established to meet the requirements of the several classifications and types of service, with seasonal operating conditions being considered.

The kind of engine service to be performed influences the type of oil best suited for each particular operation. Therefore, before replenishing or refilling

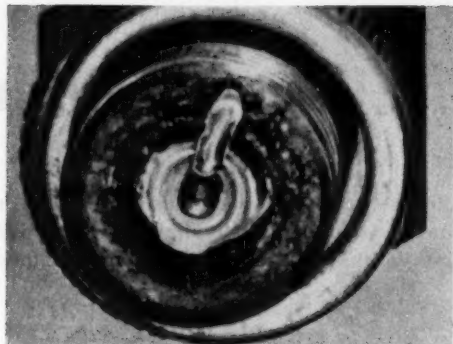
Trouble-Shooting Chart

TROUBLE	CAUSE	REMEDY
I. ENGINE HARD TO START	<ol style="list-style-type: none"> 1. Water in the fuel 2. Gasoline flow obstructed 3. Improper valve clearance 4. Spark plug gap too wide 5. Defective wires 6. Improper gas mixture 7. Incorrect timing 8. Leaks at the intake manifold 9. No compression 10. Carburetor choke not set properly 	<ol style="list-style-type: none"> 1. Let stand. When the water has settled to the bottom, drain the water from the carburetor, fuel pump sediment bowl and the gasoline tank 2. Check fuel lines, carburetor screen, fuel valves in carburetor, fuel pump and fuel pump sediment bowl. Locate and remove obstructions 3. Adjust according to manufacturer's specifications 4. Adjust gap. If short caused by fouled plugs, clean. If short caused by cracked porcelain, replace with new plug 5. Replace with new wires 6. Adjust carburetor 7. Retime 8. Tighten manifold to cylinder block and the carburetor or to the manifold. If gaskets are defective, replace and check the manifold for warping. If warped, it must be machined 9. Valves are not seating properly, and must be either adjusted or ground 10. Adjust
II. ENGINE STOPS SUDDENLY	<ol style="list-style-type: none"> 1. No fuel 2. Dirt in fuel 3. Dirt in filter 4. Water in fuel 5. Plugged fuel line 6. Air leak in gasoline line or at fuel pump 7. Ignition failure 8. Faulty fuel pump 	<ol style="list-style-type: none"> 1. Refill tank 2. Drain out. Refill with fresh fuel only after sediment bulb, carburetor and gasoline tank have been cleaned 3. Clean carburetor and air filters 4. See ENGINE HARD TO START, Remedy 1 5. Disconnect fuel lines, blow and remove obstruction 6. If in line, tighten connections or replace faulty tubing. If at fuel pump, repair fuel pump 7. Check distributor or magneto 8. Repair fuel pump
III. ENGINE MISSES	<ol style="list-style-type: none"> 1. Spark plug fouled 2. Spark plug gap not properly adjusted 3. Chafed wiring, broken cable, or loose connections 4. Leaks at cylinder head gasket 5. Leaks at the intake manifold gasket 6. Valve tappets out of adjustment 7. Engine overheats, causing valves to stick 8. Warped valves 9. Stuck valve 	<ol style="list-style-type: none"> 1. Remove carbon 2. Adjust according to manufacturer's specifications 3. Replace or tighten connections 4. Tighten head or replace gasket 5. Replace gasket, check manifold for warping 6. Adjust according to manufacturer's specifications 7. See ENGINE OVERHEATS 8. Replace 9. Remove valve cover and, with screw driver, free the sticking valve. Valve stem and guide will have to be cleaned to restore proper clearance. If condition continues, valves need regrounding
IV. ENGINE KNOCKS	<ol style="list-style-type: none"> 1. Carbon in combustion chamber. (Pinging knock in the cylinder.) 2. Loose connecting rod bearings. (Sharp knock, low oil pressure.) 3. Loose main bearings. (Heavy knock, low oil pressure.) 4. Loose piston pins. (Sharp double knock.) 5. Piston and cylinder wear. 6. Ignition timing fast. (Pinging knock in the cylinder, if not caused by carbon.) 7. Improper tappet clearance. 	<ol style="list-style-type: none"> 1. Remove cylinder head, scrape and clean out carbon 2. Replace bearings 3. Replace main bearings 4. Replace pins or bushings 5. Replace with oversize, and rebore cylinder 6. Retime distributor or magneto 7. Adjust

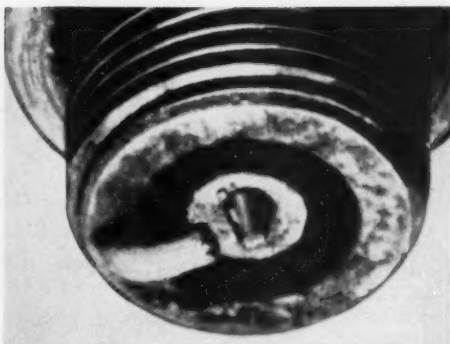
GASOLINE ENGINES . . .

Trouble-Shooting Chart

TROUBLE	CAUSE	REMEDY
V. ENGINE OVERHEATS	<ol style="list-style-type: none"> 1. Lack of water 2. Scale in water jacket 3. Particles of rubber hose, sticks, or other foreign substance inside the cooling system 4. Intake hose at pump collapses 5. Damaged water pump from ice, or other substance 6. Loose timing coupling bolts, or incorrect setting 7. Lubricating oil thin or dirty 8. Broken fan belt, or belt is slipping 9. Carburetor choke not set properly 10. Core of the radiator clogged with bugs and leaves 11. Leaky radiator 	<ol style="list-style-type: none"> 1. Add water, but allow engine to cool before adding 2. Use solvent solution and thoroughly flush the cooling system 3. Remove by thoroughly flushing out radiator and cooling system 4. Replace with wire-inserted hose 5. Repair or replace pump 6. If timing coupling bolts are loose, tighten. If setting is incorrect, correct 7. Drain oil pan, clean out filter housing, replace with new filter and add new oil of correct viscosity for the prevailing temperature 8. Replace if broken, or adjust tension. If slipping is caused by grease, remove grease. It may be necessary to replace the belt 9. Adjust 10. Remove by use of air hose or whisk broom 11. Repair. Do not use quick-stop-leak solders, as these tend to clog the circulation. Lead solder must be used
VI. LOSS OF POWER	<ol style="list-style-type: none"> 1. Low oil pressure, due to (a) external oil leaks (b) thin oil, or (c) sticking of oil pressure relief valve 2. Air leak at fuel line or fuel pump 3. Faulty ignition or timing 4. Leaky valve 5. Worn piston rings 6. Blown cylinder head gasket 7. Air cleaner obstructions 8. Obstructions in exhaust line 9. Choke valve out of adjustment 10. Improper governor adjustment 11. Improper fuel 	<ol style="list-style-type: none"> 1. (a) Repair leaks by tightening the connections or replacing the line, (b) drain and fill with fresh oil, or (c) remove oil pressure relief valve and clean it. Do not stretch the spring 2. Tighten connections or, if leak is in the fuel pump, tighten or repair pump 3. Check ignition timing and plugs 4. If leaky valve is caused by improper adjustment, adjust or grind valve 5. Replace rings 6. Replace cylinder head gasket 7. Clean air cleaner and tubing. Tighten connection 8. Remove obstruction 9. Adjust 10. Adjust link rod 11. Use only a good grade of gasoline
VII. ENGINE RUNS IRREGULARLY	<ol style="list-style-type: none"> 1. Warped exhaust valve 2. Carburetor out of adjustment 3. Leaky valves 4. Leaky intake manifold 5. Air leaks in carburetor gaskets 6. Partially closed tank shut-off valve 7. Water and sediment in carburetor 8. Fuel lines partially blocked 9. Fuel pump failure 10. Loose ground cable 11. Clogged air cleaner 	<ol style="list-style-type: none"> 1. Replace valve 2. Adjust 3. Adjust tappet clearance, or regrind, or replace 4. Tighten or replace gaskets. If manifold is warped, it must be machined 5. Tighten or replace gaskets in carburetor 6. Open 7. Stand and let water settle to bottom. Drain out water and sediment and clean screens 8. Check line. Remove obstruction and any kinks in tubing 9. Repair or replace pump 10. Tighten 11. Clean



NORMALLY WORN spark plug, carefully selected for each type of service, will have dry, light to dark brown, flaky deposits on each plug of a set.



BURNED OR OVERHEATED plug can usually be identified by dry, shiny, glassy deposits on the insulator, or cracks in the insulator tip.

the crankcase reservoir, determine which type and grade of oil is to be used. The American Petroleum Institute formulated the following commercial expressions to classify types of oil according to general chemistry composition:

Regular Grade. Regular grade oils are straight mineral oils without additives. They are suitable for service where engine loads and oil temperatures are moderate and where crankcase oil change periods are regular and frequent.

Premium Grade. Premium grade oils are straight mineral oils of the higher quality types which contain stabilizing inhibitors that retard oil oxidation as well as bearing corrosion. They are preferred in engine service where engine loads are often severe, where oil temperatures are reasonably high and where crankcase oil change period is regular but less frequent.

Heavy Duty Grade. Heavy duty grade oils are very high grade mineral oils which contain stabilizing inhibitors that further retard oil oxidation and hard alloy engine bearing corrosion. Dispersive detergent compounds also have been added to keep the solid contaminants from combustion in a finely divided state; they remain in suspension with the engine oil and are removed when the crankcase oil is changed. These oils should be used in all engines performing heavy duty service where severe loads are accommodated for periods of considerable time even though crankcase oil changes are regular and frequent.

When Engines Fail to Start

In the event an engine fails to start, first make certain that the ignition switch is turned "on", that the fuel shut-off valve is opened, and that the tank contains fuel. If all these items are in order, the next step is to check for faulty ignition.

To check for faulty ignition, disconnect one spark plug wire and hold the end of the wire $\frac{3}{8}$ inch from

(Continued on page 121)



GAS FOULED spark plug shows a black, dry, fluffy deposit from too cold a plug, prolonged idling, too rich a mixture or insufficient gap.



OIL FOULED plug, usually has a wet, black, shiny deposit caused by too cold a plug, ignition trouble, insufficient gap or worn rings or pistons.

Planning a New Handling

Before you initial the blueprint, consider additional gains that may be possible, as American Zinc found, by slightly altering product design, production equipment and manufacturing methods.

by Fred J. Meek,

Plant Engineer, American Zinc Co. of Illinois

FOR some thirty odd years our spelter (slab zinc) handling from the smelting furnaces to sampling, to storage, to railroad cars had been by narrow gauge industrial railway. While considerable thought and planning had been done toward bringing our system—which was costly as to both operation and maintenance up to date—there were many requirements met by the old system that were not easily met by any one of the present-day means of material handling or combinations of modern mediums.

The metal was cast at eight widely separated mould stand locations at four different periods of a 24-hour day, seven days a week. Some waiting time for cooling was required before the metal could be handled and drilled for sampling, and samples had to be taken of approximately every twentieth plate with the draws held in group lots awaiting assaying.

This was accomplished while using the old method

by stacking each draw on metal cars of about one draw capacity as soon as cool enough, with proper chalk markings, to await gathering each morning by a locomotive. The gathering was done after lowering each car by hand tramping and freight elevator operation from the 20-foot high working floor to ground level. From the foot of the elevator the cars were hauled to a sampling and weighing house where lots were weighed and samples taken from every twentieth plate after considerable sorting and hand handling of the 52-lb. plates and a considerable lapse of time holding idle an eight-man crew. From the weighing station the cars were hauled to the storage dock where the plates were hand piled to await shipping orders, when another round of hand handling to railroad cars was required.

Fork truck handling received the most considera-

(Continued on page 90)



EASY STACKING is made possible by the shapes in which zinc plates are cast. Bottom plates have legs for fork truck handling, but weigh the same as remaining plates in stack. Moulds were designed to produce plates in plain or interlocking form.



TO PREVENT CONGESTION in front of moulds, 24 industrial railway metal cars were built to accommodate a double set of racks. Loads of plates are stacked two-high and pushed down the line to make way for an empty car, are picked up by . . .

System?



WEIGHING AND SAMPLING of zinc plates is quick operation not requiring driver to get down from his seat. To weigh, he sets load down and backs off. Then for sampling, he moves under load, raises it against drills, (see insert). Turnings are carried through chutes into weighmaster's room on other side of wall. There, weights are also indicated on dial-type scale.



FORK TRUCK at the beginning of next day-shift. Two trucks are able to gather and store a 24-hr. production in about four hours, taking it down ramps to weigh house and storage dock. In the afternoon, the two trucks are used for loading.



SELF-INTERLOCKING LOADS may be strapped if a customer requires it, but in most instances, plates are loaded into box cars or trucks without even requiring any bracing. In almost every case, stacks arrive at their destination without any upsets.

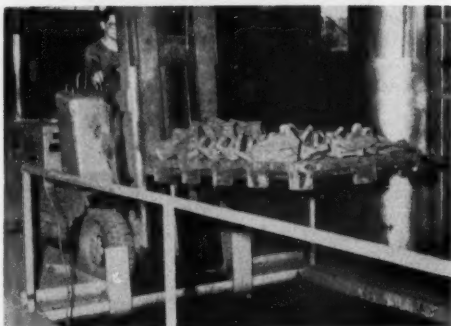
15 Ways To Handle **HOT JOBS**

HEAT TREATING

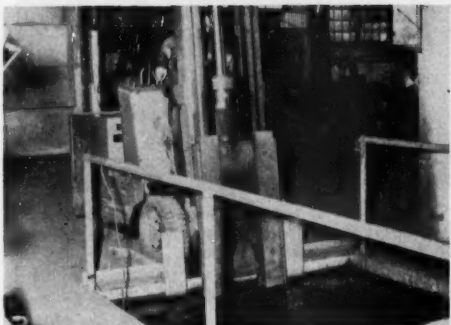
FORK TRUCK handles castings, each weighing from a pound to over a ton, in a heat treating department. The truck inserts skid loads into furnaces at 1650 to 2000 deg. F., removes & carries them to . . .



A QUENCHING TANK, where, to make the transfer from furnace to tank as fast as possible, steel angles have been secured to the floor to guide the truck into proper position. Then the forks of the . . .



SPECIALY DESIGNED CARRIAGE lower the load into the tank. After the required time, the load is raised and transported to another furnace for drawing or to storage area to await further processing steps.



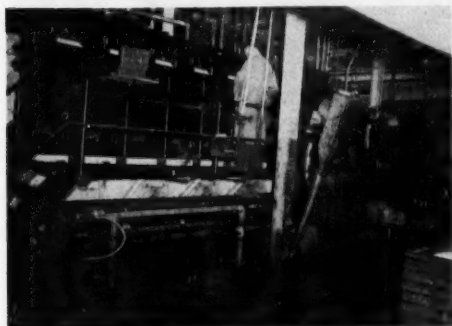
Fast disappearing are the old manual and dangerous methods of treating metals and other materials. Taking the place of muscle and eliminating singed skin are handling devices—in a wide variety of designs—for heat treating, drawing, annealing, pickling, carburizing, etching, plating and other hot or corrosive processes.

And, of course, waste time between stages or dips is also diminishing as faster handling devices are developed. In many fully conveyorized operations, the only delays now are those dictated by the time durations of the processes.

The examples shown on these and following pages are intended to provide an idea of the types

of equipment that will help on a "hot" job. A few of the components are "home made", but most are available as production items or designed to customer specifications.

Parts of some systems do not necessarily handle hot items, but since they are helpful or essential to a process, descriptions of them have been included.



CONVEYORIZED heat treating unit at Bower Roller Bearing Co. includes (right of post) a pipe enclosed sludge conveyor which, through a chain and neoprene lugs, removes sludge from bottom of quench tank.



WIRE MESH BELT conveyor some 30 feet long carries parts from a wash tank to a portable conveyor (not shown), at right angles to the discharge end, so that the parts can be fed into a heat treat furnace.



QUENCH SCALE REMOVAL conveyor, (center right) like sludge conveyor above, constantly removes residue, discharging it into a hopper. Note escalator-type conveyor from the quench, dropping parts into a bin.

15 Ways To Handle HOT JOBS

CARBURIZING

PIT-TYPE FURNACE BASKET, of Inconel frame & wire cloth, and 225-lb. load of hand tool parts in fire-flash as they come into contact with oil quench (100 deg. F.) after gas carburizing at 1650 deg. F.



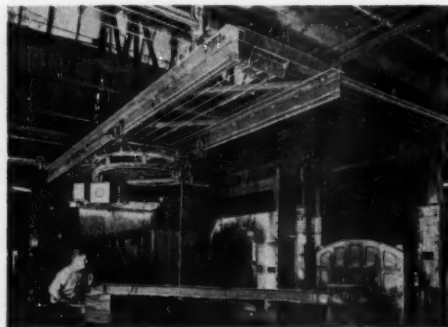
BASKET OF SPECIAL ALLOY (far right) holds bolts for carburizing at Commonwealth Industries. To protect operator from explosions which occasionally occur from moisture on parts as they enter the molten pot, a hoist attachment lowers the basket inside a steel enclosure. Safety door was opened for the picture.



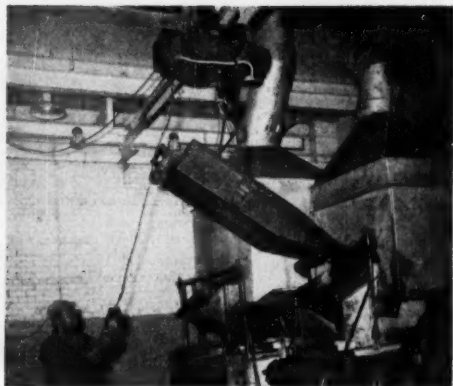
PIVOTED basket holder drops parts into quench tank, from which they are recovered by skip hoist, left. Then parts drop onto shaker feeding rotary drum washer.

HEAT TREATING

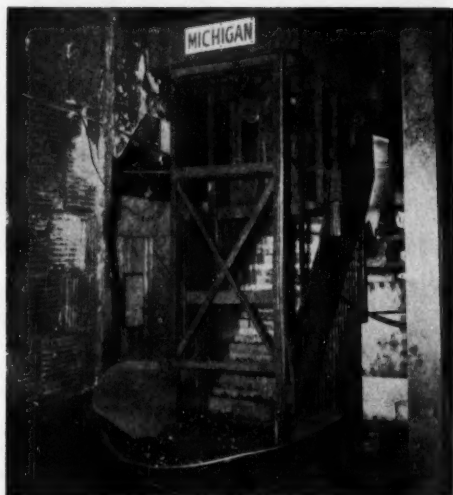
TWIN BRIDGE CRANE with a turnable type carrier is arranged for handling an extremely long annealing pot grab. Enables operator to extract heated pot from furnace, quickly shift around to quenching tank.



Photos courtesy American Monorail Co., The Cambridge Wire Cloth Company, Elwell-Parker Electric Co., Hapman Conveyor Div., Michigan Crane & Conveyor Co., and Rolock Incorporated.



CASTERED BUGGY feeds a drawing furnace at Bower Roller Bearing Company, Detroit. Hooks at one end secure to a bar over the furnace hopper. The hoist is used first to set the hooks and then to dump the parts onto the belt running through the furnace.



RECIPROCATING STEPS of conveyor carry parts to furnace. Parts feed from inclined trough of one step to trough of step above as top step slides down and lower step slides up. Rate of feed can be varied by rate of reciprocation. It handles many size parts.

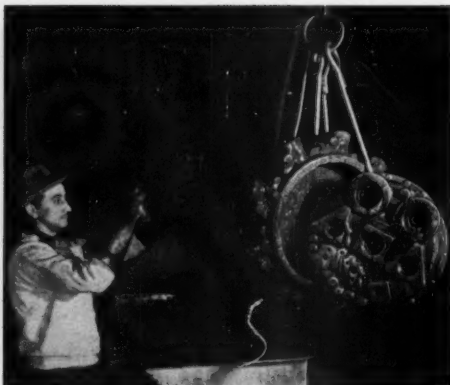


FROM FURNACE ABOVE, parts go into quench tank beneath steel floor, are brought out on escalator type conveyor, which feeds to impregnated canvas belt conveyor at left. This drops parts on metal belt operating through draw furnace at Commonwealth Industries.

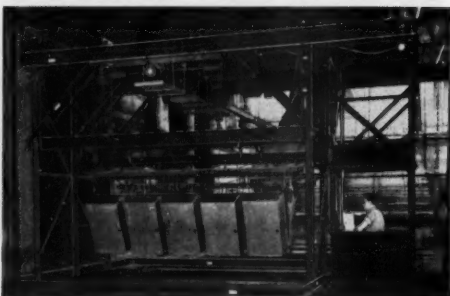
15 Ways To Handle HOT JOBS

PICKLING

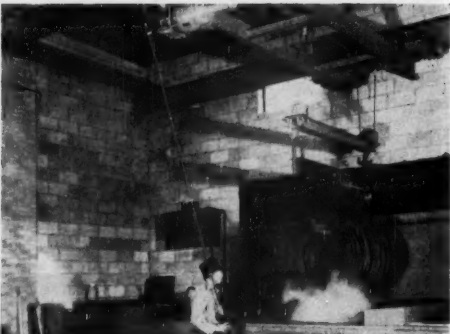
HOOKS SECURED TO A RING, lowered by hoist, take a cluster of Alcoa magnesium castings through chrome pickling, which is for corrosion protection.



FIVE AT A TIME, three successive dips per carrier are possible with this crane type unit, handling cabinet sections through pickling, degreasing and cleaning.



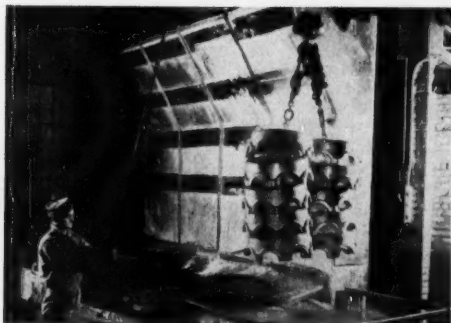
CRANE TYPE CARRIER has a twin-hook hoist which handles coils of heavy wire, on a C-type hook, through a scale-removing acid dip, then to further processing.



ANODIZING

RACK LOAD of large aluminum aircraft sections can be picked up and handled through anodizing steps by remote-controlled carrier with 2-way tractor-drive.





ETCHING

SPECIAL BAR RACK holds ten large forged aircraft crankcase sections as they are handled through etching and washing by hoist at ALCOA, Cleveland.



FUSING

HEAT-RESISTANT ALLOY WIRE is woven into a belt for a decorating lehr (glass oven), where label colors are fused at temperatures 1200 to 1270 deg. F.



PLATING

MONORAIL spur tracks extend over center line of each small plating tank to convey alloy-basket loads of parts, through switches, to successive plating dips.



BRAZING

CONTINUOUS OPERATION for the copper brazing of steel parts is provided by reinforced wire mesh belt, here the foundation for racks and forms required. Oven temperature is held at about 2050 deg. F.



GALVANIZING

A VARIETY OF HOOKS holds hot water boilers and parts as they are handled by conveyor through the galvanizing tanks of the Atlantic Steel Company.



POURING CONCRETE. This extremely rapid method of positioning a concrete-carrying conveyor was devised for use on the foundation of a steam power plant in Los Angeles. The crane, a 30-ton

machine equipped with a 70 ft. boom raises or lowers the conveyor as needed, and swings it from side to side for accurate spotting of the stream of concrete. Concrete was delivered by mixer truck.

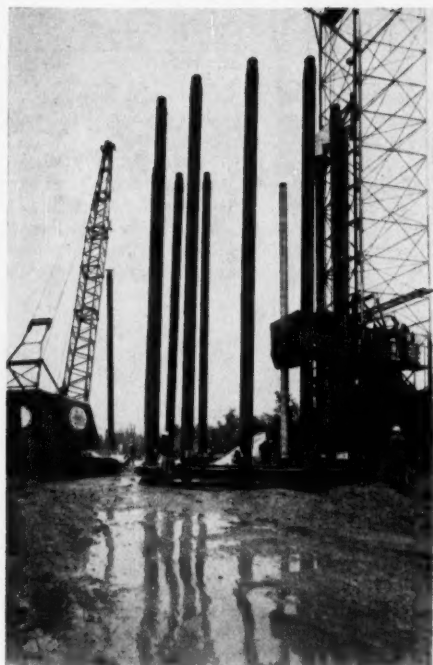


SCRAP HANDLING. These cranes can travel to any part of the scrap yard of Morrison & Risman Co., Inc., scrap dealers in Buffalo, N. Y. They use 39 in. electric magnets to stack, load, and unload scrap.

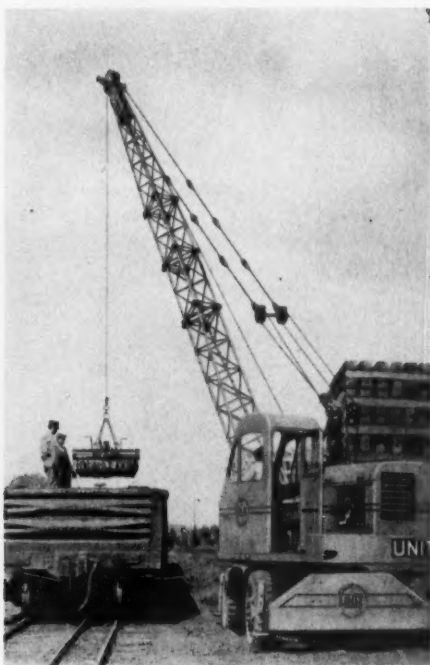
The Power Crane—

THERE seems to be no limit to the wide variety of applications to which power cranes can be put. The combination of the ingenuities of manufacturers and users of cranes when tough yard-handling problems arise has resulted in some amazing advancements through the years.

Basically, there are about 15 different working tools for crane boom use: clamshell bucket, dragline bucket, concrete bucket, magnet, skip, orange peel bucket, grab, sling, grapple, skull cracker, hook block, tongs, hairpin hook, clamps, and special hooks. In each of these classifications are a variety of specialized attachments which were devised to cut costs, speed up,



"PRODUCTION LINE" HANDLING. A 30-ton crane is used by H. C. Price Co., a pipe-line contractor, to handle pipe to and from pipe wrapping machines in preparation for use on pipe line spreads.



LOADING TIES. Through use of a special tie handling clamp attachment, this crane is able to load a gondola car quickly, neatly, and with no hazard to personnel. Pneumatic tires permit great mobility.

Versatile Handling Tool

or make safer some—usually tough—handling job.

It may seem hard to associate a power crane with production line handling, but at H. C. Price Co., Bartlesville, Oklahoma, that is just what one is being used for. The pipe line contractor lifts and removes pipe to and from an automatic pipe wrapping machine in preparation for use on pipe line spreads. The speed with which he has been able to do this job definitely places it in the "production line" category. Like so many other power cranes in use, this machine is not restricted to that one task. It also is used for loading wrapped and cemented pipe into barges, for unloading raw pipe before it has been processed, and for dip-

ping the already wrapped pipe into cement vats.

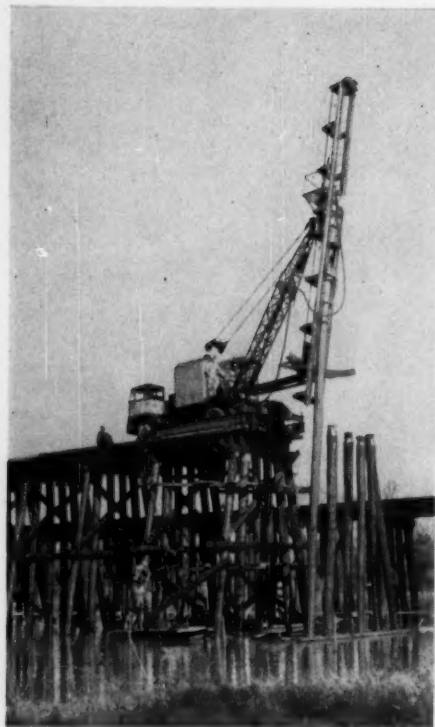
As any sidewalk superintendent can verify, the uses of power cranes in the construction industries are legion. One wouldn't expect to find anything new in that field. Still, only a short time ago, when a steam power plant was being built for the City of Los Angeles, a 30-ton crane was given an unusual job. Concrete which was delivered by mixer truck had to be poured into far sections of the foundation of the building. A belt conveyor received concrete from trucks, and carried it to the distant points. To make positioning of the conveyor faster and easier, the crane, with a standard hook block was used. A special

POWER CRANES . . .

rigging was welded to the framework of the conveyor. As concrete was being poured, the conveyor was raised or lowered, or moved from side to side.

An industry which depends on cranes probably more than any other is the scrap industry. Almost any scrap yard, regardless of how small it might be, is certain to have one of these useful handling tools in full time operation. The mobility of cranes makes them ideal for this type of operation, making possible quick trips to the scrap yards of manufacturers for scrap pick-up.

Cranes are ordinarily built in a wide range of sizes and capacities from four to 60 tons maximum crane lifting capacity. specific applications, machines can be built with much larger capacities, but in every case, it is necessary to apply the machine's equipment, size and mounting to each individual job in order to get the best results from the unit.



PILE DRIVING. In building a trestle, a power pile driver mounted at the end of the boom of this truck-mounted crane helped get the job done in a hurry.



UNLOADING STEEL SHEETS. Self-propelled, one-man operated crane can be adapted for handling long, narrow sheets of steel with this beam and sling attachment, adjustable for different length sheets.



HANDLING BULK MATERIAL. Dragline is ideal for handling soft to medium hard materials at or below ground level. Bucket can be cast long distances. Draglines can also load trucks.



Refter-high storage of bulky boxed cereals at Kellogg Company, Battle Creek, Michigan.

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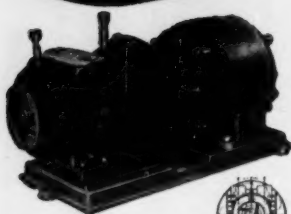
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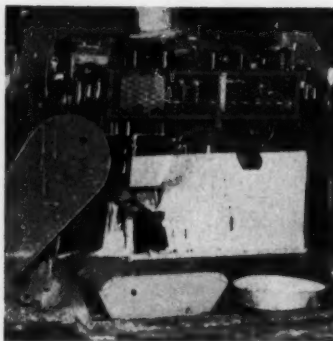
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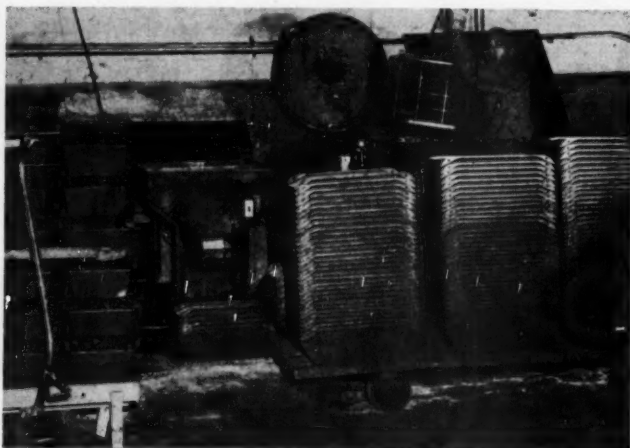
FASTER THAN A MACHINE GUN can use them, links are produced by multi-slide press. Links drop into tote boxes, are taken to inspection, then are placed on semi-live skids for processing.

Nesting Tote Boxes

Simplify Handling of Small Parts

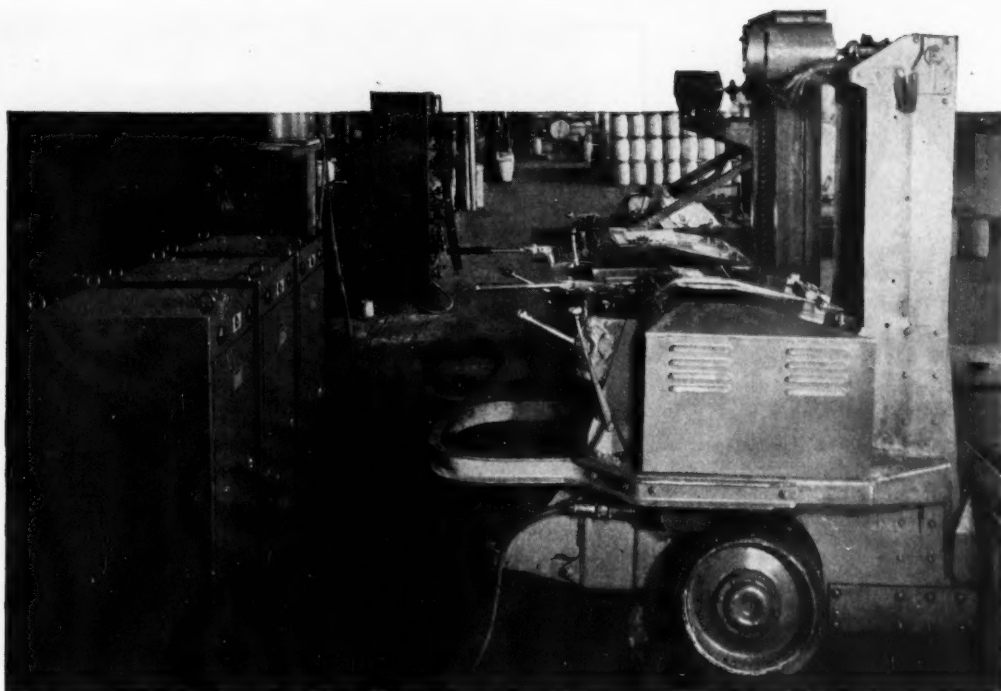
HARD TO HANDLE, space wasting five-gallon paint buckets were formerly used by Jackes-Evans Mfg. Co., St. Louis, to carry 30 cal. machine-gun belt links through steps of manufacture. When riding on conveyors, the buckets were unstable, and spillage was a problem.

After considerable study, it was decided to replace the buckets with containers which nest when empty, and tier when loaded. It was felt that they would reduce storage space considerably, and make handling between processes much easier. The new system, as illustrated in the accompanying photos has proven completely satisfactory. More economical handling, greater speed, and easier storing have resulted.



FINISHED LINKS are placed into boxes with undrilled bottoms for transfer to packaging department. Empties are nested and returned to storage area to await re-use.

Photographs by Clarence Mange



How work-area charging increases truck availability

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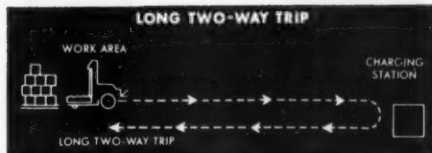
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If you want a better caster... an economical caster, why not contact your local A.I. representative or write direct, 'phone or wire Albion's caster engineers? They will be happy to serve you—

**All ALBION CASTERS are
Engineered for the Job!**



Series Eleven
"All-Purpose"
SWIVEL CASTERS
(Rolite Wheels)

Write Today for your free copy of
Albion's 1952 illustrated caster
catalog. It's yours for the asking!

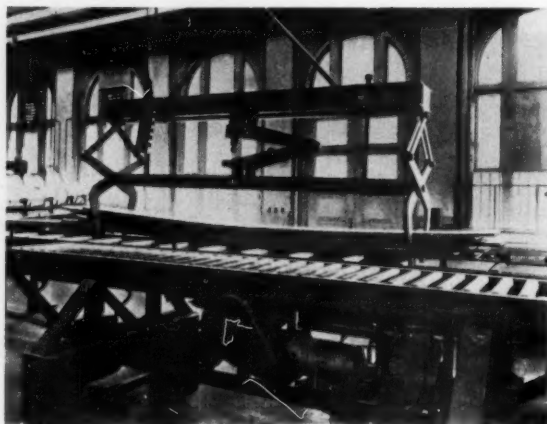


**ALBION
INDUSTRIES, Inc.**
Albion, Michigan

Represented in Canada by:
C. J. McDONALD, 365 Yonge St., Toronto, Ont.

Circle No. 117 on Reader Service Card

28



Shiny new dimes, about 400,000 of them will be made from these eight slabs being carried by automatic tongs at the U.S. mint in Denver. Operation of the tongs is controlled by one man, using the set of push-buttons suspended near the tongs, saving time and manpower, and reducing the possibility of accidents. Tongs grasp slabs automatically, transport them to a table conveyor 50 ft. away, release grip, and are ready for new load.

SPECIAL BUILT RACKS, Trucks, Baskets

*can lick your
difficult materials
handling jobs*



When standard type equipment fails to fill the bill perfectly do what many other manufacturers have done—solve your tricky materials handling problems with Hoff Crafters specially built racks, trucks, trays, baskets, dollies, pallets, etc., built to fit your own particular needs—individual units or complete combinations—one or a thousand.

Hoff Crafters equipment is economy-engineered for low first cost and greatest efficiency in your handling operations. Write today for full information, no obligation. Ask for bulletin F-2.

TOP—Rack truck with removable trays and adjustable tray spacing used by large bakery. RIGHT—Rack with sliding trays for quick-freeze plant and designed for fork lift.



HOFFMAN COMPANY
41-43 N. PENN ST., YORK, PA.

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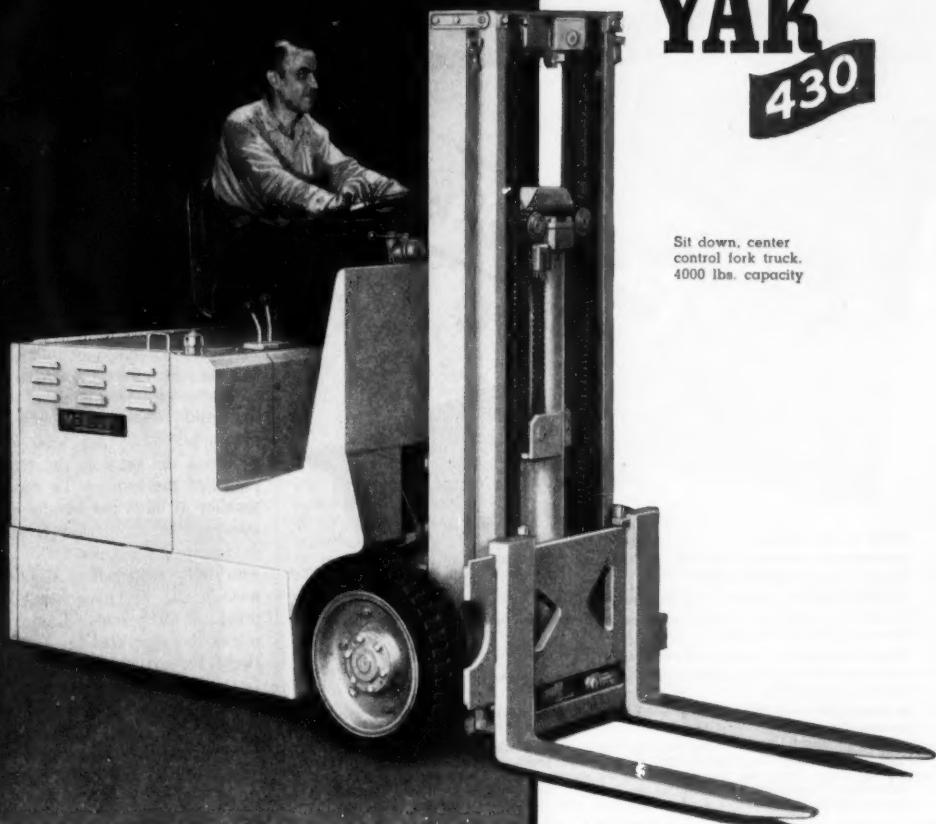
FLOW • MARCH, 1953

New...

Mercury

YAK

430



Sit down, center
control fork truck.
4000 lbs. capacity

Included in the many advanced design features of the new MERCURY "Yak" 430 are...higher maximum fork elevation
★ increased free lift ★ greater speed ★ lighter chassis weight ★ shorter turning radius ★ simple low pressure hydraulic hoist system ★ new unit drive with quick detachable motor and self-energizing hydraulic brakes ★ new compensating castor type steering axle ★ Timken duo-grip parking brake actuated by driver's seat. Write for complete details.



MERCURY MANUFACTURING CO.
4154 S. Halsted St., Chicago 9, Ill.

Send copy of new MERCURY "Yak"
430 Bulletin to:

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COMPANY _____

ADDRESS _____

CITY _____ STATE _____

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safe, long-lasting
MAGCOA
light-weight **HEAVY-DUTY**
DOCKBOARDS
 will cut your handling costs



Here is the valuable information about **MAGCOA Light-weight HEAVY-DUTY DOCKBOARDS** contained in this new bulletin.

- how they reduce dock accidents—protect men, equipment and loads—because they are light and easy to handle
- how they speed up loading and unloading
- how they are braced like a bridge and individually engineered for your requirements—built to last indefinitely
- how exclusive MAGCOA features make for greater maneuverability, prevent run-offs, prolong tire-life.

Above all, you'll discover why so many top industrial companies have standardized on MAGCOA Dockboards for freight car and truck loading in all their plants. At the same time, ask for new literature showing how Magcoa's magnesium fabricating experience and facilities can help you improve your products through use of light-weight, heavy-duty magnesium. Use the handy coupon.

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Please send ☐ Dockboard Bulletin ☐ Fabrication Folder

Name _____ Title _____

Company _____

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NEW SYSTEM?

(Continued from page 74)

tion in figuring out many possible cost saving systems. The plates of zinc formerly cast were not very amenable to fork truck stacking and handling with safety, and the quantities produced at one station at one draw period was relatively too small to justify continuous trucking service throughout the 24 hours, yet large enough to create congestion if the stacking of a day's production were attempted on the floor adjoining the mould stands. There was also the problem of getting to the ground level. Our freight elevators were too slow and were located where railroad traffic and other obstructions would have made fork trucking difficult.

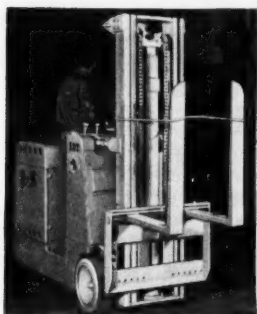
Solving the Problem

Our solution to this problem was the adoption of fork trucking with several alterations of product, equipment and procedures to make the conversion possible.

To begin with, in order to have a firm, easily-stacked bundle not requiring dunnage, we adopted a style of plates with length equal to twice the width, resting on specially cast bottom-plates having legs and yet weighing the same as the remaining plates of the bundle. To reduce the number of units per bundle our new moulds were designed in plain form or interlocking form for customers who desire them, all of 56 pounds of metallic zinc per plate instead of the previous 52 pounds. Having determined that a drilled sample of every twenty-second plate would be satisfactory for control and sorting for grade, it was decided to make the bundles of four footpiece plates covered by 40 regular interlocking plates (four per layer), in order that a drilling sample of zinc chips could be readily taken by drilling two top plates of every bundle. Because this produced a rather small bundle (2464 pounds), a fork truck was chosen that could handle two bundles at the required load center extension of nine inches. To permit the driver to have the best of vision for his gathering work in close quarters, on somewhat rough floor and among assorted pieces of furnace equipment, a fork truck with a low upright (59-inch clearance) was chosen, which permitted vision over

HANDLING HELPS

by A.L.L.



Folding Forks

Here's an idea developed by G. E. They wanted to be able to operate this Lewis-Shepard Fork Truck on both 1st and 2nd floors . . . but its overall length was too much for their elevators. Solution: a simple addition of two rods holding the shaft-hung forks as they are swung to the up position. It cuts 15 inches off the length of the truck. Result: one SpaceMaster Electric Fork Truck going up.



A Handy Dandy

There are many types of hand operated equipment that can serve as valuable support to your power line. This L-S Handy Hoister is a good example. It is designed for one-man operation on loads up to 2000 lbs. It pushes easily on roller bearing wheels . . . floor lock prevents movement in racking. It may very well be the answer to a problem in your shop. Write for the full story. *Lewis-Shepard Products, Inc., 44-3 Walnut St., Watertown 72, Massachusetts.*



Modern handling saves \$140,000 in one year for S. D. Warren Co.

"We packaged our materials handling problems, and with a \$52,000 initial investment in Lewis-Shepard Electric Fork Trucks and Tractors, realized a savings of over \$140,000 in the first year of operation without adding any new buildings for storage," reports Mr. L. S. Pearson, Industrial Engineer at S. D. Warren Co., Cumberland Mills, Maine.

A recent addition to this efficient S. D. Warren handling system is the new Lewis-Shepard JackLift Electric Platform Type Truck, used for handling skid loads of paper.

This combination of L-S SpaceMaster Fork Lift Trucks and Tractors, plus the new JackLift Electric, continues to produce the same rate of savings. They operate 24-hours-a-day, 7-days-a-week . . . evidence of their quality and dependability.

These same savings could be yours. Send coupon today for full story of the new JackLift Electrics with capacities to 6000 lbs. . . the quality trucks in the walkie field. Find out how they are helping to cut handling costs in all types of business and industry.

HERE'S MORE PROOF OF LEWIS-SHEPARD WALKIE TRUCK DEPENDABILITY

Listed are some current L-S reorders from blue-chip companies in various industries.

Motor Car	45 L-S in use — reordered	2
Grocery Chain	73 L-S in use — reordered	6
Chemical	14 L-S in use — reordered	5
Elec. Goods	194 L-S in use — reordered	14
Carbon Mfr.	23 L-S in use — reordered	4
Mfg. Chemicals	74 L-S in use — reordered	6
Glass Mfr.	12 L-S in use — reordered	2
Rubber Goods	5 L-S in use — reordered	3

Nationwide Service — See "Trucks Industrial"
in your Yellow Phone Book

LEWIS-SHEPARD®

44-3 Walnut St., Watertown 72, Mass.



SEND FOR . . .

- JackLift Electric Catalog
- Electric Walkie Truck Comparison Chart
- Proof folders showing L-S Trucks at work



Name _____
Company _____
Street _____
City _____

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What bulk materials do you handle?

Versatile FARQUHAR Trough Conveyors will move it faster with less labor!

Frank Casillo & Sons, a concrete block company in Bethlehem, Pa., moves aggregates from hopper-bottom cars to storage bins, with the aid of this Farquhar Conveyor and Car Unloader.



◀ A mid-west firm finds its Farquhar Conveyor, with the Farquhar Car Unloader, makes short work of unloading phosphate from cars to storage piles.

AGGREGATES, dirt, coal, chemicals, wet cement—Farquhar moves them all, saving you manpower and time. Farquhar Trough Conveyors are dependable, engineered to move material efficiently and to give you trouble-free service for years. Their low feed end makes them perfect for unloading hopper bottom cars, in combination with Farquhar Car Unloaders. Where loading is done by hand, the low feed end permits scraping of material to the carrying belt. If you handle any bulk material, Farquhar Trough

Conveyors can save you money by saving you time and labor . . . and pay for themselves in a short time.

Whether you move coal, gravel, sand, aggregates, cartons, boxes, bundles, bales, or any kind of bulk or packaged materials—horizontally or from floor to floor—Farquhar can cut your handling costs to rock bottom! One or more of the complete line of Farquhar portable, semi-permanent power-belt or gravity conveyors will solve your handling problems. Our engineers will be glad to consult with you . . . at no obligation!

OLIVER

FREE!

"Owners Report"—a booklet of case histories of money-saving conveyor installations.

**Farquhar
CONVEYORS**

MAIL COUPON FOR YOUR COPY

THE OLIVER CORPORATION
A. B. FARQUHAR DIVISION
Conveyor Dept. M-06, York, Pa.

Gentlemen,

Please send me my free copy of "Owners Report."

Name

Firm

Address

City

Zone State

**POWER-BELT
AND
GRAVITY
CONVEYORS**

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NEW SYSTEM?

Continued

the top of the load. Since the truck was to travel down an eight per cent ramp, back tilt of the uprights and forks was provided to thirteen degrees from vertical, which added stability to the double-tiered bundle loads in transit from the furnaces, down the ramp and to the weighing and sampling station adjoining the storage dock.

The requirements to be met at the mould stands were rather difficult because the production was at irregular periods over a 24-hour day, the draws had to be kept assembled and properly marked and yet must be gotten out of the way before the next draw, which precluded floor stacking immediately in front of the moulds. The work must not be made greater or very different from the past practice of loading production on metal cars and hand tramping the cars just far enough from the moulds to make room for another car. This was met by rebuilding 24 of the industrial railway metal cars to accommodate a double set of bundle stacking racks on each car, which could be filled two bundles high and then pushed a car length or two down the line to make way for an empty rack car and await the gathering fork truck on the next day shift.

At the beginning of the day shift two fork trucks gather and store the 24-hour production in a matter of about four hours, taking it down the ramps to the weigh house and storage dock. One truck could handle the job by working a full day, but it was found best to use two trucks in the morning for gathering and use the same two trucks in the afternoon to load out the required shipments in railroad box cars and occasional trucks.

Procedure for Gathering

Our procedure of gathering is to paint mark each bundle for identification while in the racks at the mould stands, pick up a two-bundle load from either side of the rack cars and proceed down the ramps, as illustrated, to the weigh house. Here the two-tier load is temporarily set on the concrete floor and the bundles picked up individually for weighing, sampling and spotting on the nearby



FEEDS HOPPERS, CONVEYERS. Special high-speed reverse increases output on short runs between stockpile and hopper. Steel tracks stand up in cullet and other sharp, abrasive material.



EXCAVATES, LOADS TRUCKS. This busy crawler has the power to dig into hard-packed materials—and bring it out, a full cubic yard at a scoop. In handling light materials, an interchangeable two-yard bucket doubles its capacity.



HANDLES PACKAGED AND SOLID MATERIALS. With Lift Fork in place of bucket, the HD-5G skids, carries and stacks palletized loads weighing up to 4,000 lb. Stacking height beneath forks is 106 inches.

New Trends in Mechanized Materials Handling

**WITH ALLIS-CHALMERS
TRACTOR SHOVELS**



STOCKPILES COAL, SILICATES, ANY BULK. Traction and flotation enable this crawler to work right up on a stockpile . . . allow it to spread and compact coal in thin, horizontal layers to eliminate spontaneous combustion.

Crawler tractors — basic machines on earth-moving and construction jobs — are now solving more and more bulk materials handling problems in industry with hydraulic front-end shovels. And spearheading this new trend is the Allis-Chalmers HD-5G — thousands of which are now in use in plants of all types. This multi-purpose crawler combines power, traction and maneuverability with a wide selection of hydraulically operated attachments for a variety of material handling jobs.

Get the full story on how crawler tractor power and versatility can help mechanize your tough jobs. Ask your Allis-Chalmers dealer about the HD-5G and these three larger tractor shovels: 2-yd. HD-9G, 3-yd. HD-15G and 4-yd. HD-20G. Light materials buckets range from 2 to 7 cu. yd.

ALLIS-CHALMERS
TRACTOR DIVISION — MILWAUKEE 1, U. S. A.

Here are a few of the other jobs the HD-5G and its attachments will handle:

Maintains yards and roads with bulldozer or shovel • Clears snow from parking areas • Moves machinery and other heavy materials with Crane Hook attachment • Spots railroad cars at loading docks • Digs trenches for pipe or foundation footings with Trench Hoe attachment

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HOWE Scales

JUST OFF THE PRESS

HOWE SCALES

HOWE SCALE

Let Us Send You This New Condensed Catalog

The NEW Howe Scale Condensed Catalog showing a complete line of industrial scales and hand trucks is yours for the asking. Includes data on the new Howe Weightograph and the new Howe Tape-Drive Dial Scale line for improved weighing operations. Send for your copy today.

THE HOWE SCALE Co.
RUTLAND, VERMONT

Dept. F-3 Rutland, Vermont

Please send me:
HOWE CONDENSED SCALE CATALOG NO. 11 ☐
HOWE HAND TRUCK CATALOG NO. 15-B ☐

Name

Title

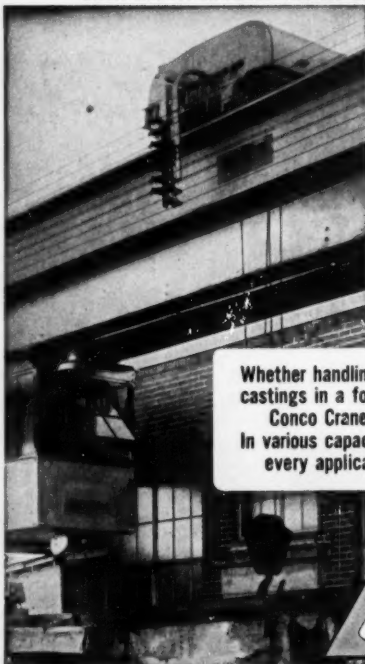
Company

Address

City State

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94

Circle No. 146 on Reader Service Card for more information



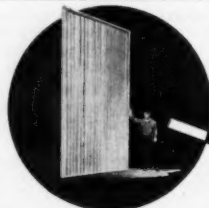
*First
for
Performance*

Whether handling steel in the yard, castings in a foundry, or servicing a machine shop, Conco Cranes rate first for performance. In various capacities and spans, a type for every application. Write for details.

CRANES HOISTS
CONCO

CONCO ENGINEERING WORKS

Division of H. D. Conkey & Co., 38 Grove St., Mendota, Ill.



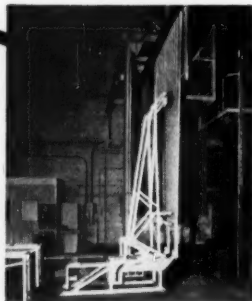
You Don't Toss These 500-Pound Doors Around One-Handed

Ingenious Fully Automatic Material Handling System Moves Bulky Steel Doors Safely and Efficiently Through A Production Cycle.

This Allied installation which includes up-ending and automatically hanging them on to a moving overhead conveyor, maneuvers 12-foot by 14-foot heavy, steel doors through a production cycle.

Each door, held in a frame by magnets, is raised from a horizontal to a vertical position then set on to an overhead conveyor and released to travel through various production processes. Finally it is removed from the conveyor and returned to the original, horizontal position—a finished product.

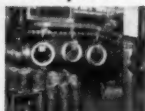
Every phase of the handling cycle is automatic and synchronized with every other movement.



Allied Manufactures Various Types of Conveyors



Combines Conveying with a Production Operation



Overhead Chain Conveyor handles automotive parts

The Door Handling Installation may not apply to any of your material handling problems but whatever their nature the Allied Engineering staff can assist you in providing practical solutions for them. We suggest you consult us.

ALLIED

STEEL AND CONVEYORS, INC.
17319 HEALY AVE., DETROIT 12, MICH.

Circle No. 72 on Reader Service Card for more information

FLOW • MARCH, 1953

storage dock in groups expected to be suitable for shipping together (subject to the results of assaying).

The weighing is done by lowering the bundle onto the small floor platform of a dial-type printomatic metal scale, withdrawing the forks momentarily so the weighmaster can satisfy himself of their clearance and picking up the load again on his order. The sampling is done by raising the load a few inches above the scale platform while moving forward a few inches, thus positioning the top of the bundle under the two-drill automatic sampler, with the fork truck holding the load firmly up under the drill guides. At the push of a button which is hanging a few inches to the left of the driver's hand on the steering wheel, the drilling cycle is started, and in about thirty seconds a drilled chip sample has been taken by piercing two of the top plates of the bundle. The chips are automatically delivered to sample trays in the weighmaster's room immediately behind the sampler where they are marked with identifications corresponding to the bundle markings observed by the weighmaster through a convenient window. At the close of the sampling cycle the driver, who has not had to leave his seat, hauls the single bundle out of the weigh house to the close-by rail side storage dock to await shipping orders. The tiering of bundles on the dock may be done up to four high (reaching the bearing load limit), but when not crowded for space, is usually done two high for a convenient load pick-up and easy sorting at railroad car loading time.

Car Loading

Most car loading is done in the afternoons and the two trucks easily handle the gathering, weighing, sampling and shipping on the day shift. The self-interlocked bundles are strapped for some customers within the same period, but the greater part goes into box cars without even requiring bracing and arrive in good shape without upsets or being shaken apart.

Overall costs have been very favorably reduced in making this conversion. Maintenance thus far has been very greatly reduced, and the investment, while considerable, is probably no greater than the present-day replacement cost of the old equipment.

use **COFFING** **Quik-Lifts**

for **tough-spot dependability**

Pick out the tough spots on your production line . . . key spots where a breakdown means a costly shut-down. Then find out how the Coffing Quik-Lift's dependability really pays off. This hoist is a full-fledged production unit, built to stand up under hard assembly-line use. Its "tough spot" performance will soon repay its cost many times over in down time saved. So do as many others have done. Start the Quik-Lift on a hoist assignment where others have failed — then standardize on Coffing after it has proved its value the hard way.

For more information on Quik-Lift Electric Hoists, write for Bulletin FL3E.

COFFING HOIST COMPANY

Danville, Illinois

sold by distributors everywhere

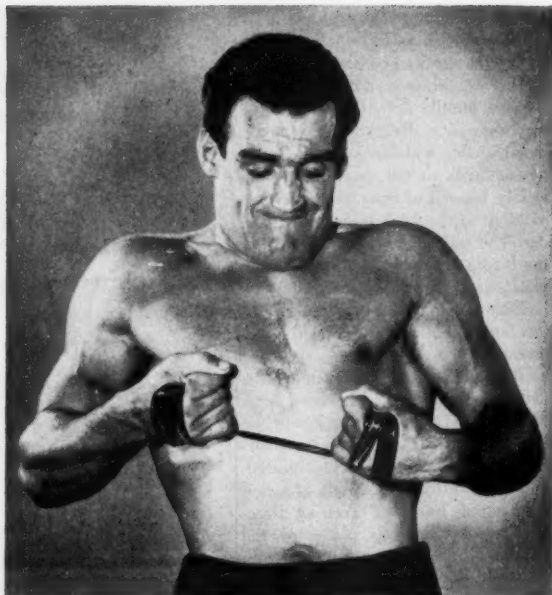


Hoist-Alls • Safety-Pull Ratchet Lever Hoists
Mighty-Midget Pullers • Spur-Gear Hoists
Differential Chain Hoists • Load Binders
I-Beam Trolleys

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World's strongest tape?

Even the world's strongest wrestler can't break it! This unbelievably tough "Scotch" Brand Filament Tape proves itself on scores of "impossible" heavy-duty jobs.



Paul Baillargeon, world's strongest wrestler



REINFORCING these 57 lb. cartons is a cinch with "Scotch" Brand Filament Tape No. 880. Unlike conventional banding materials, tape doesn't cut into cartons or make loading difficult.



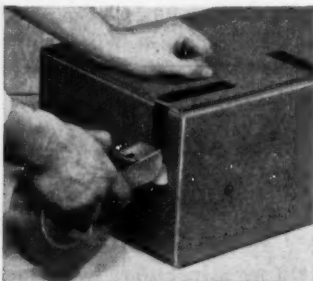
SECURING free end of huge sheet metal rolls is another job done faster, easier with "Scotch" Brand Filament Tape No. 880. Despite rough handling, only one strip of tape is needed.



BUNDLING veneer door rails, moldings, millwork and siding *safely* with "Scotch" Brand Filament Tape No. 880. Tape prevents slipping and sliding of pieces in bundles. Easy disposal, too!



BANDING and identifying tubing, conduit, and steel rod stock with "Scotch" Brand Filament Tape No. 880. Automatic banding equipment is available. Tape comes in red, white, black and transparent for color coding.



HANDY DISPENSER offers quick method of applying "Scotch" Brand Filament Tapes. For more information, plus a sample roll of tape for testing purposes, write Minnesota Mining & Mfg. Co., Dept. F-33, St. Paul, Minn.



Made in U. S. A. by
MINNESOTA MINING & MFG. CO.
St. Paul 6, Minnesota



The term "Scotch" and the plaid design are registered trademarks for the more than 200 pressure-sensitive tapes made by the makers of "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Scotchite" Reflective Sheeting, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives. General Export: 122 E. 42nd St., New York 17, N. Y. In Canada: London, Ont., Can.

Circle No. 153 on Reader Service Card for more information

PACKAGING and SHIPPING SECTION

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DEVOTED TO THE MECHANICS OF PACKAGING AND
PREPARATION FOR SHIPPING MATERIAL HANDLING FUNCTIONS

An Easy Index to This Month's Advertisers

Are you looking for a particular type of packaging and shipping equipment? Listed below are advertisers according to the type of product they are advertising in this issue. We have attempted to make your job a little easier by listing them as often as possible. To use this index, find the type

of product in which you are interested . . . turn to the advertisers listed under that product . . . circle the correct numbers on the reader service card, mail it in, and you'll get complete information in a jiffy.

CONTAINERS

Central Fibre Products Co., Inc.	110, 114
Bigelow-Garvey Co.	119

CUSHIONING AND BARRIER MATERIALS

Central Fibre Products Co., Inc.	110, 114
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TAPE AND TAPE DISPENSING EQUIPMENT

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No. 1 in a series on . . .

**"Preparing Your
Products for Shipment"**



CLIP AND SAVE

THIS is the first in a series of articles designed by FLOW to help you achieve new economies in preparing your products for shipment. Clip and save every one of these articles . . . regardless of the type of product you ship. You will find information of value in one or more which will appear in the series.

Here's a tentative line-up of subjects which you will see covered in coming months. . . .

2. Preparing BULKY Objects for Shipment.
3. Preparing FRAGILE Products for Shipment.
4. Preparing PERISHABLE Products for Shipment.
5. Preparing HEAVY Items for Shipment.

No. 1 in the series . . . "Preparing Odd Shaped Items for Shipment", follows on the next pages . . .

How to Prepare for Shipment...

ANY reasonably intelligent person should, by trial-and-error methods, be able to devise a way to protect a product for shipment . . . providing he has enough material for experimentation, enough padding to jam into the package, and an almost inexhaustible supply of money to pay for the bad guesses he must make.

Before his method of protecting the product has been worked out, the inexperienced designer will likely have made any number of unsuccessful shipments. The container which he will finally design will probably be too large; it will probably weigh many times what it should, and cost more than the product it carries. And of course, the freight charges for shipping the container are apt to be "out of this world."

Fortunately, as a manufacturer, you are not required to depend on guess-work to find a package which is most suitable for your product. At your disposal are research departments maintained by all container manufacturers, where through the application of engineering knowledge and experience gained through years of package planning, your product will be studied thoroughly and a container will be designed which gives all necessary protection at a minimum of cost.



WOODEN CRATE is placed over this lathe and attached to the base for protection during shipment. Note that the machine is also bolted to the base. With the cover of the crate installed, the only contact between container and contents is at bottom.

The more irregular the shape of a product, the more apt is an inexperienced designer to evolve a Rube Goldberg type monstrosity. An experienced package engineer will always design as simple and low cost a package as possible, no matter how odd the shape of the product. A supplement to the rule, pertaining to the use of cushioning, bracing, strapping, etc., (When in doubt, use more than enough material), should probably be, "Remove as much doubt as possible in the first place, by applying sound engineering principles to the design of your packages."

Using Nailed Wood and Wirebound Containers for Packaging Odd Shapes

Several methods are used for packaging odd shaped products in wood boxes and crates, and wirebound containers. Often, the base of a heavy item is bolted to the bottom of a container to prevent shifting during transit. Then, top and sides are added, usually with bracing attached at important points.

Where there is no means for fastening a product to the bottom of a container, it is common to use blocks for prevention of shifting. They are laid out

(More on page 106)



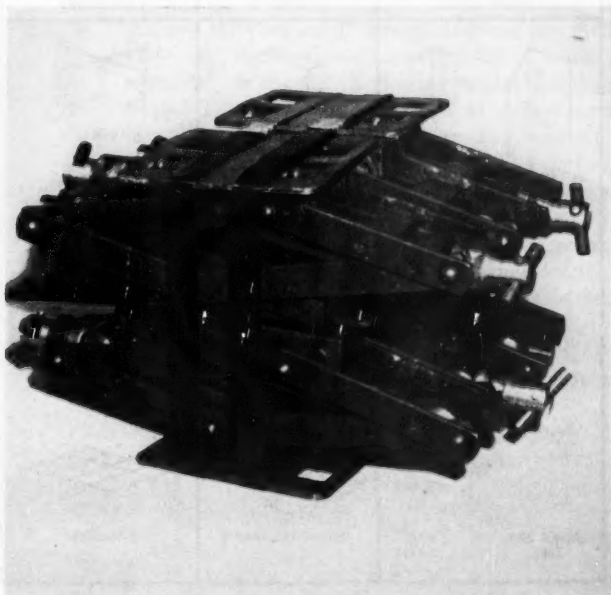
CORRUGATED INTERIOR PACKING helps to insure safe delivery of precision honing machine shipped by Sunnen Products Co., St. Louis. Packing is designed to prevent shifting of contents and to dampen shock by "floating" machine away from sides of container.

....The First in a New Flow Series

WIREBOUND CRATE is wrapped around coin-operated hobby horse. Note bracing being installed in position where they will engage intermediate cleats at side of crate after two half-mats have been wrapped around. Wooden blocks nailed to base prevent shifting.



STEEL STRAPPING holds six "scissors-type" auto jacks together in a closely knit unit. This is a good example of how even the most irregular shaped products can be packaged in a manner which will result in an easily handled and shipped unit.





FIBRE DRUM IS SHOWN HERE IN CUT-away view to show one method used to package, brace odd shaped item.

to form a snug depression into which the base of the product fits. Then, when sides and padded top are closed tight, the product is held down between the blocks.

Both wire bound and nailed wood containers can be supplied to users in knocked-down form making them easy to store before use. For filling operations, they can be assembled and closed securely with a minimum of trouble and with only a few tools.

Using Steel Strapping

Products which ordinarily require no container for shipment, (scissors-type auto jacks, tires, bundles of rod and tubing, etc.), can be bound together in compact unit loads which are easy to handle, easy to load into vehicles, and which require only little space both in shipment and in storage.

For most efficient use of space, bundles of cylindrical items can be built up in "hexagonal" or "square" patterns as compared to the less efficient "round" bundle so often used. A good procedure in building such units is to make use of an adjustable jig in the shape which the bundle will assume. For a hexagonal bundle, the number of units placed in the bottom tier will determine the exact number which can be included in the entire bundle with its equal-length sides. For instance, a bundle started with five pieces of tubing laid side-by-side, will have 61 pieces when completed.

A common way to use steel strapping, one which has resulted in safe, inexpensive shipping of not only irregular shaped products, but

(More on page 104)

CORRUGATED SEPARATING DEVICES

CORNER PIECES	LINERS	PARTITIONS	PADS	OTHER DEVICES
 "L" SHAPED	 ONE PIECE	 DIAGONAL	 REGULAR	 INTERLOCKING SHEETS
 DOUBLE "L"	 STAR SHAPED	 FULL HEIGHT	 REVERSE	 DIE CUT SHEET
 ACUTE ANGLE	 OCTAGONAL SHAPED	 SHOULDER HEIGHT	 SPRING PAD (REGULAR)	 SCORED SHEETS
 RIGHT ANGLE		 EXTENSION	 SPRING PAD (SPECIAL)	
 SPRING PAD TYPE				
 RADIO TYPE				

NO MATTER HOW YOU LOOK AT IT . . .

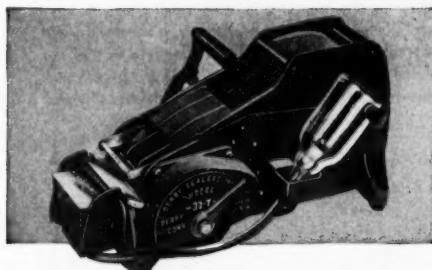
Derby

TAPE DISPENSERS LEAD THE FIELD

- industrial
- commercial
- retail

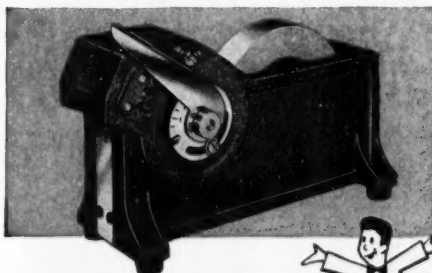


MODEL 80 SERIES Dispense predetermined lengths of the toughest pressure sensitive tapes. Deliver accurate, measured lengths from 1½" to 20" in a variety of widths.



MODEL 32 For general shipping room use — Kraft tapes.

MODEL 32-T For filament reinforced tapes.



MODEL 90 SERIES The only lever-operated tape dispensers that accurately deliver measured lengths of cellophane tape. Ideal for retail counter . . . locker plants . . . all industry.

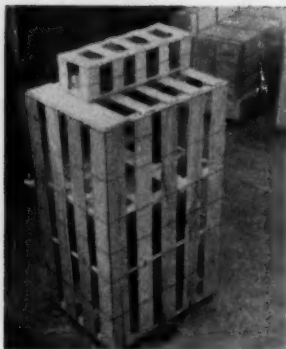


QUALITY TAPE DISPENSERS FOR EVERY PRACTICAL PURPOSE

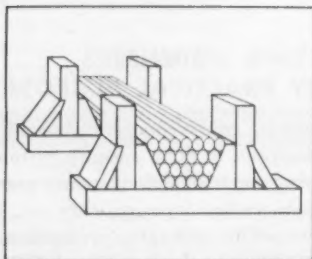
Derby's extensive, comprehensive line of tape dispensers are designed to meet specific customer needs. Rugged shipping room models dispense gummed tape or tough, fibrous carton tapes quickly . . . easily . . . accurately to expedite packaging production. Versatile Grip-A-Tab models are designed to deliver predetermined lengths of a variety of pressure sensitive tapes for every purpose from packaging at the retail counter to difficult industrial jobs requiring speed and accuracy. They'll deliver cloth tape, filament, plastic, electric, glass fibre, woven glass, cellophane, acetate fibre, and a host of other pressure sensitive tapes to suit your particular needs. Although each machine is designed for a specific job, Derby and Grip-A-Tab Dispensers can easily be adapted to handle a multiplicity of packaging operations requiring different widths, lengths and types of tape.

DERBY SEALERS, INC. Derby, Connecticut

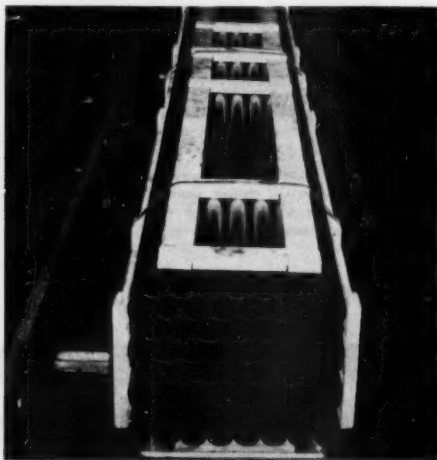
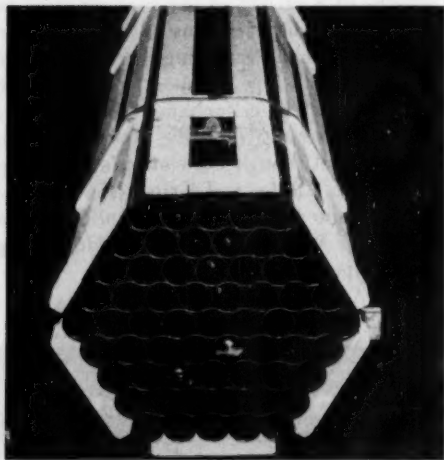
Circle No. 66 on Reader Service Card for more information



WIREBOUND HOOD attached to container holding band saw eliminated freight penalty which would have been levied if top of saw were allowed to protrude.



STEEL STRAPPING holds together bundles of tubing or similar shaped products. A jig similar to the one at left can be used to make up bundles. Hexagonal pattern can be pulled tighter than Square pattern. Both patterns shown here, are sturdier than round pattern. Dunnage is used to protect fine surfaces.





packaged to give support at critical points which might not be reached by standard shaped pieces.

In determining the best interior packing for a corrugated container, a package engineer will consider; first the type of protection required . . . then the bracing material which provides enough strength and cushioning at the proper points . . . then the material which does the required job with as little waste as possible.

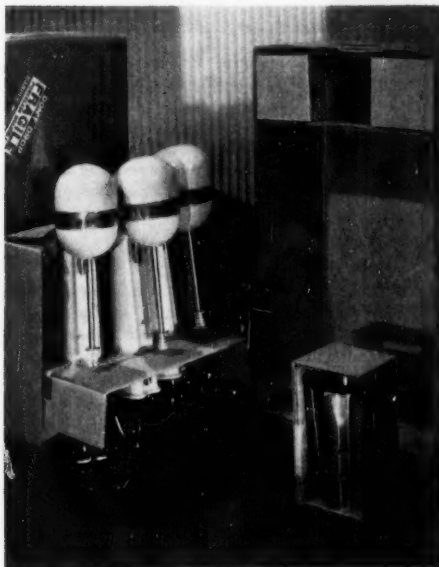
Die-cut sheets make possible bracing at almost any point, no matter how intricate the product. If heavy products are to be enclosed however, die-cut sheets might not provide the strength required. It might be necessary to install built-up pads, made up of layers of corrugated board, a method which uses much material. Often, a clever packaging engineer can combine the more standard inserts with special die cuts, built-ups, etc. to give the strength required, as as low a cost as possible.

Flow's thanks to the following companies for helping the preparation of the material:

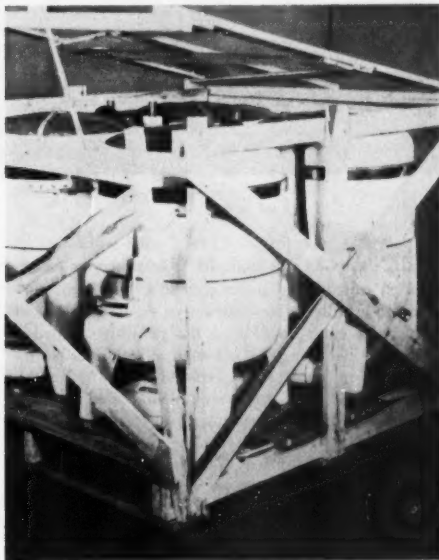
Acme Steel Co.; Bigelow-Garvey Lumber Co.; Brainard Steel Div., Shain Steel Corp.; Gaylord Container Corp.; General Container Corp.; Hinde & Dauch Paper Co.; Wirebound Box Manufacturer's Assoc.



BEAUTY CHAIR must be protected from scratching as well as from damage due to shock. Before top brace is put in position, chair is covered with protective paper. Then wirebound mats are wrapped around.



DIE-CUT corrugated pieces, and scored sheets are used to solve a problem of shipping a complex electrical appliance. The mixing unit packaged in this relatively small container consists of three mixers and three shakers, weighing a total of 55 lb.



FOUR WASHING MACHINES can be shipped in one wooden crate through use of properly designed interior bracing. Machines are placed on skids which are bolted to bottom of crate. Wringers are bolted to individual bottom sections. Units "float".



AFTER GOOD PACKAGING . . .

Safe Shipping

FLOOR TO ROOF loading is easy in this specially equipped car. Note extension of wall belt members through doorways for solid car loading. Loading methods like this have greatly reduced damage.

WHEN the box car made its appearance on American railroads in the mid-1830's, it virtually defeated two of the most destructive enemies of good shipping. Its emergence from the primitive "burden car" that trailed along behind such locomotives as the DeWitt Clinton, came about because of two things:

1. Until that time, too many people had made a soft living from stealing things from railroad trains.
2. Merchandise carried in an open car was more vulnerable to damage by weather than that carried in a covered car.

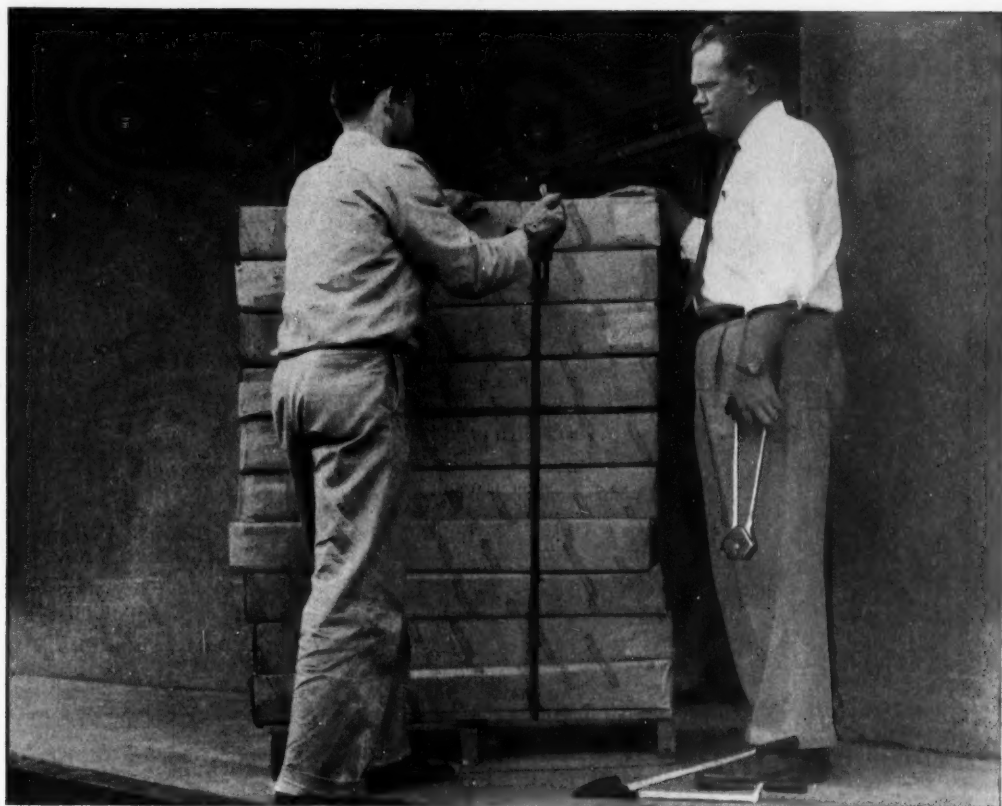
With both problems lessened considerably by the introduction of the box car, a third enemy to good shipping stepped into the limelight. Each year, shippers became more and more concerned with the heavy burden of damage claims. (According to estimates, rail freight damage claims in 1952 totalled more than \$100 million, with truck transportation damage proportion-

ately as large.)

Sound solutions to this problem are being provided by bulkheading of permanent and semi-permanent types which have been developed in recent years. In addition, manufacturers of strapping put their engineering minds to work on better ways of securing lading. Carton and packaging specialists have made a steady progress in their assault on freight damage claims.

The Association of American Railroads itself, deeply concerned with the freight damage problem, has spent a great deal of time and money in developing and trying to promote its own "bonded block" loading plan for merchandise packed in cartons and boxes.

In one University, (Wayne University in Detroit), a complete curriculum devoted to all phases of materials management has been established. First of its kind in any American university, Wayne's Materials Management Center devotes a large part of its course of study to ways and means of reducing the toll taken



How Brainard Strapping Service speeds handling of shipments

GLEN BOYD, Brainard salesman in Dallas, is out here on the shipping platform because Brainard service includes *on-the-job demonstration* . . . to make sure steel strapping is properly applied, and its full benefits realized.

In this case, cartons containing knocked-down kitchen tables are loaded by the shipper on a pallet, then the entire unit is steel-strapped. With this method, the shipping unit is rigid, thus protected against damage and

pilferage, and can be handled and moved about quickly.

Brainard's Dallas office is a new one . . . established to put more and more experienced strapping salesmen near users. To improve your shipping and materials handling, call your nearby Brainard salesman. He is qualified to study your operations, and recommend and *demonstrate* the most efficient system for you. Offices located throughout the U. S. In Canada: Brainard Steel Canadian Division, Toronto.



COMPLETE STEEL STRAPPING SERVICE, LIGHT AND HEAVY DUTY STRAPPING, TOOLS AND ACCESSORIES

Write for illustrated catalog, Brainard Steel Division, Sharon Steel Corporation, Dept. K-3, Griswold Street, Warren, Ohio.



STEEL STRAPPING

Circle No. 110 on Reader Service Card for more information

AFTER GOOD PACKAGING . . . Safe Shipping

Continued

by freight damage claims. Members of the faculty are, for the most part, professional shipping and material handling experts recruited from the ranks of industry in the Detroit area. Sponsors of the center are indus-

tries which have learned, through costly experience, the need for better ways of shipping to cut damage claims.

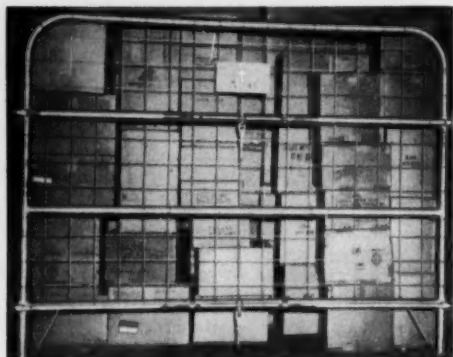
Types of Bulkheading

Whether you use a highly specialized car or truck, the function of which might be limited to one thing, or whether you use cars designed for general merchandise, the goals are the same; making use of the vehicles to carry more freight to its destination with less damage.

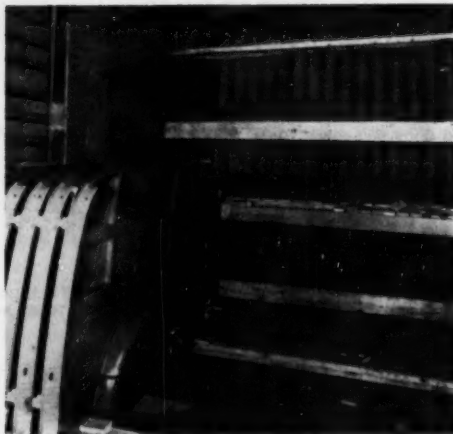
Much has been done in the designing of bulkheads for use in cars and trailers. These are generally supplied in standard lengths and have telescoping ends or some other means of expanding and contracting to fit varying widths of different vehicles.

About 20 kinds of specially-equipped cars can be used. Most of them, of course, have been equipped with a special purpose in mind. Several have found great favor and widespread use among shippers. These are flexible enough to let the car or trailer retain its universal-lading features as a general purpose car in spite of its special equipment.

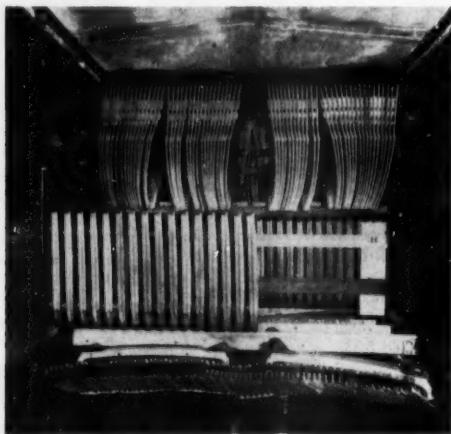
One type of specially equipped car has walls lined with perforated sheet steel from floor to roof. Double keyhole shaped perforations in the steel wall lining receive the end locking fittings of cross members which can be adjusted to lock against the lading to keep it



BULKHEAD constructed of seamless steel tubing and cold drawn welded wire fabric. Bulkhead is positioned by two men, who use ratchet arrangement to anchor steel plates into sides of car.



VERTICAL WALL MEMBERS can be adjusted to hold various size loads with this type permanent installation. Wood cross members are adjustable vertically and can be used in combinations which best protect product.



PERMANENT INSTALLATION of bulkheads in this car uses perforated steel sheet which lines car walls. End locking fittings of cross members can be adjusted to lock against lading to prevent shifting in car.

from shifting while the car is in motion. These perforated lining-equipped cars are used primarily for shipments of auto body sheet metal stampings. The perforated steel sheets are welded to steel car wall posts. Doorway areas in these cars are provided with removable channel-shaped sections punched with the same type of keyhole shaped as the side wall sheets, so that doorway area loads can be built if desired.

In a variation of that principle, side walls of a car are equipped with three serrated-edge belts of steel equally spaced from floor to car roof. To these belts, specially designed vertical channel sections are held at any desired location. The cross-members that lock against the lading are of wood construction and are held in place at any height in the vertical channels by a yoke tightened by a clamp nut at each vertical wall member. The doorway is provided with a special longitudinal member to permit the load to be extended through the doorway area when required.

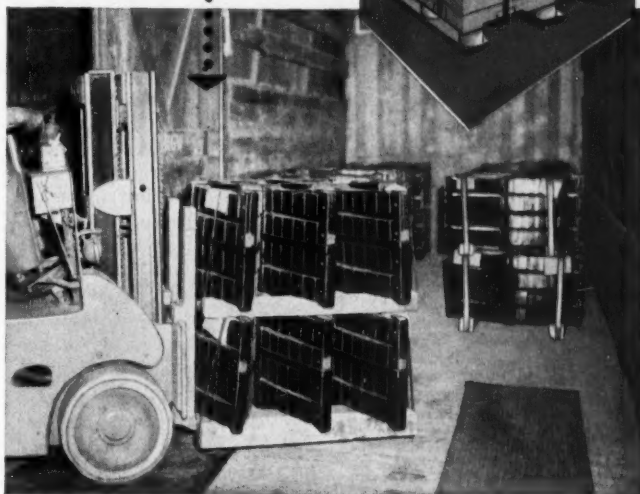
Another Solution

Another answer to the freight claim damage problem is a car incorporating three adjustable compartments—one at each end and the third in the middle. Two pairs of floor-to-roof gates, adjustably hinged to car walls can be locked against lading stowed at either end of the box car. Lading is stowed, then the gates are locked in place firmly against it. At the opposite end of the car, the same procedure is followed. The space between both gate-enclosed segments can also be loaded solid, thus permitting three compartmentized segments in any car equipped with this device. Perforated tracks along both car walls, and along the floor and roof of the car permit each pair of gates to be locked against lading at three-inch intervals from either doorway to end of the car. As with the other type of permanent dunnage cars, movable parts can be stowed at one end of the car when not in use, thus making it available for general purpose lading.

An installation which can be built as an integral part of existing box cars, consists of longitudinal wall

Saved 14 containers!

**Saved 50%
handling costs!**



SIGNODE OFFERS YOU BETTER STRAPPING METHODS*

Even your "best" can be improved. A manufacturer of TV transformers formerly shipped 168 units in 15 cartons. Signode helped them work out a multi-unit package

combining 175 units in one—bound into a compact pallet load with Signode steel strapping. This application was easy to work out but...

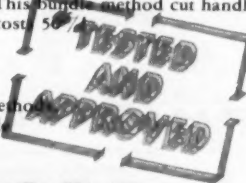
this one was a toughie!

Diesel springs, heavy and unwieldy, formerly were shipped loose in railway cars. At the point of assembly, each of eight component parts of the spring had to be handled separately. Signode, with the foundry men, worked out a new idea. Three pre-bundled

spring assemblies were strapped onto an inexpensive pallet. When the springs reached the assembly line, the steel strapping was left on the individual spring bundles until they were mounted in place. This Signode method cut handling cost 50%.

we'll help you, too!

If you want to try palletizing for the first time, or improve your present method, we'll help you, too. To have a Signode man call, write



SIGNODE

Steel Strapping Company

2618 N. Western Ave., Chicago 47, Ill.

this seal means security in shipping

Offices Coast to Coast.
In Canada: Canadian Steel Strapping Co., Ltd.
Foreign Subsidiaries and Distributors World Wide

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Circle No. 133 on Reader Service Card

Add the "WHIPPET" MARKER to Your Conveyor Line....



Automatically dates, codes, or marks production runs of cartons, packages... readily adapted to your present conveyor lines.

Friction between Marker and moving package or carton will imprint date, code or any other information. It will automatically spot-print legend. In operation the printing drum spot-prints, turns immediately in $\frac{1}{2}$ revolution or less to a positive stop; then is ready to repeat the cycle. There is no oscillation of the printing drum.

Inking is through a felt roller that has a self-contained reservoir.

Uses interchangeable rubber type.

Used by candy manufacturers, distillers, oil companies, food packers, etc., to mark filled bags, cartons, boxes, rolls, cans, etc.

Send for "Free" Catalogue

We make machines to print corrugated cartons and multivall bags that are filled or flat, also for multivall marking.

THE INDUSTRIAL MARKING EQUIPMENT COMPANY, INC.
454 Baltic Street, Brooklyn 17, N. Y., Dept F
MAin 4-2601

angle belts (ordinarily eight to each side of the car), steel-reinforced wood cross members with adjustable end locking fittings and deckboards that can be used to segregate load segments or as flooring for second-tier loads when laid across the cross members.

In this last mentioned type of installation, wall belts run the length of the car and are spaced from floor to roof at eight or nine predetermined intervals. These belts are perforated to give half-inch interval adjustments for the cross members. In the telescoping end fittings of the cross members are two steel fingers that lock securely into the perforated wall angle belts, giving almost unlimited adjustment lengthwise, and, because the wall angle belts are only a foot or so apart, the cross members can be moved up or down at will, permitting wide latitude in vertical adjustment.

Recently, this principle has been applied to over-the-highway trucks. One company has equipped several of its units and expects to have its

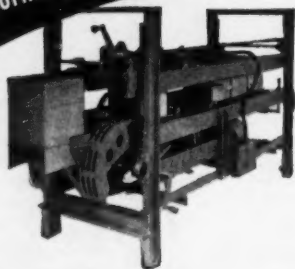
entire fleet equipped by mid-year.

Devices like those discussed in this article are proving every day that there is an answer to the wasteful toll America's shippers and carriers have had to shoulder in carrying on their part of industry's vital commerce of moving goods and materials from plant to consumer.

You owe it to yourself and to your customers to study every possible means for protecting your products in transit. Your responsibility does not end with the selection of a container and proper packaging. It goes right into the freight car or trailer. If any of the devices discussed or illustrated in the preceding article strike your fancy, let us know, and we will see that complete information is sent to you.

Flow's thanks to Evans Products Co. for contributing a large part of the material contained in the above survey. Thanks also to Pittsburgh Steel Products Co., New York Central Railroad, and Pullman-Standard Car Mfg. Co. for contributing information and illustrative material.

A shorter, narrower, simpler, and better performing case sealer



THE NEW A-B-C Junior CASE SEALER

The A-B-C Junior Case Sealer automatically seals corrugated shipping containers in only a fraction of the floor space ordinarily required. Operation is fast—trouble free—economical. A completely new flight chain construction virtually eliminates carton jamming... Three semi-automatic models are available to fit most case sizes. Write today for details and floor plans.



A-B-C PACKAGING MACHINE CORP.
QUINCY, ILLINOIS

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110

Can You Use These PACKING SPACERS too?



- ★ CYLINDERS
- ★ BLOCKS
- ★ ROLLS

(hard or soft)

Core Diameters:
1½, 2¼, 3, 4, 5, 6,
7, 8, 10, 10½ inches
Outside Diameters:
Up to 14 inches
Length of Rolls
and Blocks:
From ¾ to 48 inches

Shippers all over America are finding ways that Central Fibre Packing Spacers can help them protect their products better and at lower cost.

Send for a sample assortment now!



CENTRAL FIBRE PRODUCTS CO., INC.

Quincy Container Division

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FLOW • MARCH, 1953

For packing that
can take it...



Tape it with Behr-cat[®]



The impact strength of BEHR-CAT Strapping Tapes withstands the shocks and jolts of the roughest treatment. They're reinforced with the muscles of fiber-glass filaments, to stand the strain of shipping. The high tensile strength of BEHR-CAT Tapes combined with their light weight makes them a natural for replacing steel straps, banding, ropes, wire and other out-moded methods. Saves poundage in shipping, too. Application is simple — it sticks at a touch without wetting. Customers like it, too, because your packages open easily without special tools. Order a supply from your distributor today.

YOUR SPECIAL TAPE PROBLEM

is welcomed at BEHR-MANNING. Our fully staffed laboratories are completely at your service. Put us to the test. Write us today. Address Behr-Manning Corp., Troy, N.Y., Dept. FL-3.

For Export: Norton Behr-Manning Overseas Inc., New Rochelle, N. Y., U. S. A., and in Canada, Behr-Manning (Canada) Limited, Brantford.



BEHR-MANNING
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- ▲ COATED ABRASIVES
- ▲ SHARPENING STONES
- ▲ PRESSURE-SENSITIVE TAPES



The name BAGPAK is a standard of leadership, and of quality... for BAGPAK means complete production control in bag manufacture, from the planting of seedlings which eventually produce pulp, to the delivery of the finished sack to your plant—in fact, even to the furnishing of special filling and closing machines to insure the best protection for your product.

Multiwall Paper Shipping Bags are described in the above brochure. For your copy, write to Bagpak Division, International Paper Company, 220 East 42nd St., New York 17, Dept. L-9.



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BAGPAK DIVISION

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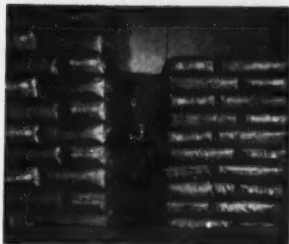
FLOW • MARCH, 1953

WHAT'S NEW... in Packaging and Shipping Equipment

Carbon Black Bag

A valve-type bag which gives stable, compact unit load shipments of carbon black, with substantial savings in space has been announced by J. M. Huber Corp., manufacturers of carbon blacks, clays, and rubber chemicals. A 2500 lb. unit load of fifty 50-lb. valve-type bags is 69 in. high in contrast to 84 in. for a unit load of conventional bags, it has been reported. The new bags also stack well in conventional car loadings.

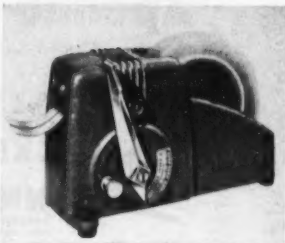
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For Exact Measurement of Cellophane Tape

Better Packages, Inc. has added two cellophane tape dispensers to its line of 12 models for industrial and retail pressure tape use. The Little Inch, No. 5 Slitter, (See illustration), loads with standard 2592 in. rolls, one in. wide. It slits tape into two $\frac{1}{2}$ in. strips and may be pre-set to measure any length up to four in. Also introduced was a regular model for any width up to one in., and for measuring pre-set lengths up to four in.

Circle No. 184 on Reader Service Card for more information



All-Weather Fibre Carrier

A patented weather-resistant laminated fibre board is being used by Gaylord Container Corp. in a returnable carrier for store-door delivery of paper milk bottles. The idea is applicable to applications in many other fields. The board has the ability to stand up under rain, snow or ice. It can be washed and cleaned many times. The container is shipped to users knocked-down. When assembled, they can be nested for stacking purposes.

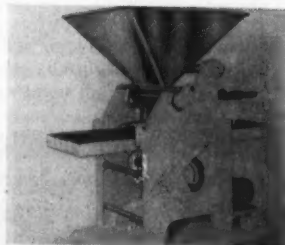
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High Speed Filling Machine

A high-speed, four line filling machine that fills all types of viscous products, including glues, pastes, creams, paints, jellies, preserves, mayonnaise, oils, chemicals, etc., has been developed by The Filler Machine Co., Inc. All types of containers are filled at a rate of 80 containers per min. A single adjustment centers different size containers under the filling nozzles and upper filling head adjusts for all heights.

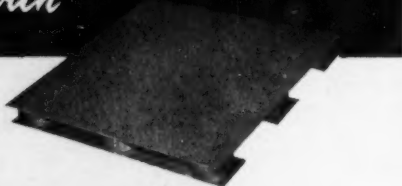
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*Would You Like to
Reduce Shipping Costs?*

MAKE YOUR OWN PALLETS

with



Xpendo-pac

EXPENDABLE FIBRE



POSTS



DECKS



RUNNERS

Designed to meet
your specific needs

Precut — ready to assemble
as used. All you need
is a glue pot.

Save 7 ways —

- Save freight costs
- Save on capital investment
- Save labor
- Save packing costs
- Save handling losses
- Save valuable time
- Save space

Almost any materials that can be moved, can be shipped on XPENDO-PACS. Our engineers will develop an XPENDO-PAC for your particular job, and give you full instructions on its assembly and proper use.

Write for complete information on this **NEW** cost-cutting materials handling development.

Made under Addison-Semmes Corp. Patents



CENTRAL FIBRE PRODUCTS CO., INC.

Quincy Container Division

130 JERSEY • QUINCY, ILLINOIS • PHONE 8700

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114

PACKAGING & SHIPPING NEW EQUIPMENT

Continued

Resin-Coated Staples

Duo-Fast staples are now being resin coated, the manufacturer, The Fastener Corporation, reports, for use where exceptionally strong holding power is required. The resin application is said to double the gripping power of the staple.

Circle No. 187 on Reader Service Card

Corner Lap Gluing

National Adhesives Div. of National Starch Products, Inc. has cooperated with General Corrugated Machine Co. to come up with a machine and adhesive which are said to permit especially high speeds of closure of manufacturer's joints in corrugated cartons or cases. In the machine, there are no glue rolls, and the adhesive is not exposed to air prior to application. The adhesive reservoir is air-tight, and the adhesive is applied automatically to the joint by jet action. A glue with special properties was designed for use with the machine. It has a synthetic base, is tacky, non-settling, and will not clog the stirrer or injection tip of the machine. In production,

ITS FELT TIP WRITES ON EVERYTHING!



in **BOLD** or *fine* lines

Marking steel drums, tools, parts, pipes, etc. is smooth sailing with the Flo-master Felt-Tip Marker.

The complete range of ten colors in Flo-master inks permits speedy and accurate identification for assembling, stocking, inspecting.

Flo-master semi-opaque inks — waterproof, non-smudging, fast-drying — are recommended for hard-to-mark surfaces using the KING SIZE Flo-master. For general purpose marking — cartons, cases, etc. — use Transparent inks with POCKET SIZE Flo-master (illustrated).

Contact your supplier or write direct to Cushman & Denison Manufacturing Co., Dept. F-7, 153 West 23rd Street, New York 11, N. Y.

Flo-master

FELT-TIP MARKER

Circle No. 111 on Reader Service Card for more information
FLOW • MARCH, 1953

good results have been reported at speeds of 90 board ft. per min., on a semi-automatic feed machine with a short compression unit. This is possible because the adhesive sets within 10 seconds.

Circle No. 189 on Reader Service Card

Thin-Tough Masking Tape

A backing, made of cellulose fibre saturated with a special rubber compound is said to be the



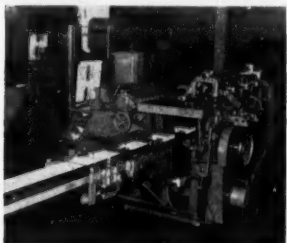
secret behind Mystik Brand Thinflex Masking Tape's unusual thinness and flexibility. It is claimed by the manufacturer, Mystik Adhesive Products, that no sacrifice of necessary

strength is caused by the tape's thinness. Advantages claimed for the new tape include: greater speed of handling; positive holding at high temperatures; no residue; great stain resistance, satisfactory performance under adverse weather conditions.

Circle No. 190 on Reader Service Card

For Mass Production Wrapping

The Package Machinery Co. has announced a high-speed frozen food wrapping machine that



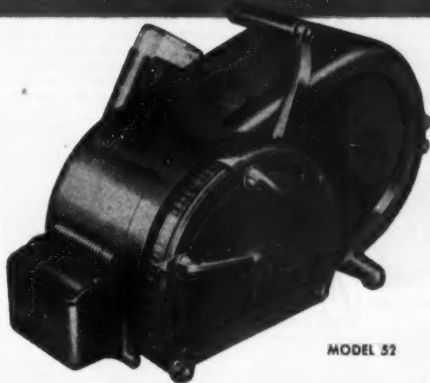
permits maximum production with continuous motion frozen food fillers. The new fillers, which have a speed of 300 packages a min., have provision for discharge into two wrapping

machines, and since the company's new model has a speed of over 160 per min., the production of the fillers should now be handled with ease. While the machine, designated, FF-H wrapping machine holds basically to a reciprocal motion design, it is built in such a way that smooth uninterrupted operation is obtainable despite its high speed. Although primarily designed to wrap the standard size frozen food cartons, the machine can be adjusted to accommodate perfectly any carton from 1 3/8" to 1 7/8" high, 5 to 5 5/16" long, and 4 to 4 1/4" wide. Changeover requires from 10 to 15 min.

Circle No. 188 on Reader Service Card

FLOW • MARCH, 1953

FREE 10 DAY TRIAL OFFER



MODEL 32

streamline your
packaging operations with a

NATIONAL TAY-PER®

- **SAVE TIME** — simplified operation speeds packaging
- **SAVE LABOR** — automatic moistening control* reduces rub down time
- **SAVE MONEY** — automatic dispenser delivers any predetermined lengths, eliminates waste
- **AVOID DAMAGE CLAIMS** — positive moistening control "welds" tape to cartons for double protection

*endorsed by the Association of American Railroads and the Gummed Industries Association, Inc.



NASHUA PACKAGE SEALING

DIVISION OF NASHUA CORPORATION
Nashua, N.H.

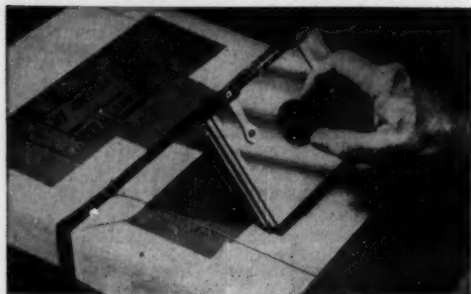
World's largest manufacturer of tape moistening machines and gummed tape.

Please send me a National Tay-Per for a 10 day FREE trial.

Name _____
Company _____
Address _____
Dept. 20

Circle No. 160 on Reader Service Card for more information

Circle No. 23 on Reader Service Card for more information



LOT LABELLING

for Storage or Shipment Made Faster . . . More Accurate . . . Cheaper!

Faster than pasted labels . . . faster than stencil and brush. Print direct . . . 1000 or more clear, sharp copies without re-inking. Prints practically anywhere . . . postcards, tags, labels, boxes, cartons, packages, menus, forms, letters . . . paper, cloth, wood. Just type, write, trace or draw on inexpensive stencil . . . snap it on duplicator . . . and print—like using a rubberstamp. New pre-cut "FORM-CUT" stencil prints shipping form and identification data in one operation.

THE ORIGINAL HAND STAMP
STENCIL DUPLICATOR



OVER 30 YEARS

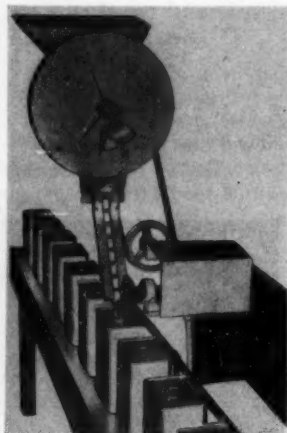
MULTISTAMP
STENCIL DUPLICATOR

Portable . . . non-mechanical . . . of non-corrosive metal . . . replaceable ink pads. If complete outfits, \$9.50 to \$99.50, including supplies (f.o.b. factory). Write for literature or see your office or shipping room supply dealer.



Fully Automatic Lid Sealing Machine

Here's a fully automatic lid sealing machine, made by Tite-Cap Machine Co., Inc. It consists of a specially designed hopper which automatically feeds the lids or seals into a chute. A rotating head equipped with magnetic fingers picks up a seal from the bottom of the chute and applies it to the opening in the can as it moves into position under the rotating head. No supplemental operation is necessary as the application of the seal is positive, it is claimed. The rotating head as well as the magnetic fingers are all fully adjustable, so that seals of lids may be applied to an opening in any position on top of the can. These adjustments include compensation for variations in the cans.



Circle No. 191 on Reader Service Card



LEADERS
IN THEIR
LINE

How to be **CONFIDENT** with MILITARY PACKAGING

MID-STATES GREEN CORE BARRIER RAPS

Conform to government packaging specifications

When you specify Green Core Barrier Raps, you can be sure that the product is protected completely. Further, you'll save time in packaging because these easy-working, extra pliable wraps are conforming to any shape. They're safe-tested.

GRADE "C" BARRIERS

Greaseproof, acid-free, moisture-proof, pliable, and self-sealable, to meet all requirements of specifications JAN-B-121 (Methods 1A-1 conforming wrap dip coat sealed; 1A-2 container overwrap dip coat sealed; 1A-3 greaseproof, waterproof bag, sealed; and 1A-8 greaseproof, waterproof, moisture-vaporproof bag sealed) when Grade "C" is specified.

GREEN CORE Cloth Rap

Heavy duty (Type 1). Manufactured expressly for the packaging of heavy and irregular-shaped items. Produced to meet Class 1 spec. (wax-coated on non-greaseproof side) and Class 2 (wax-coated both sides).

GREEN CORE Rep

Medium duty (Type 2). Manufactured expressly for small items such as cams, gears, bearings, etc. Produced to meet Class 1 spec. (wax-coated on non-greaseproof side) and Class 2 (wax-coated both sides).

GRADE "A" BARRIERS

Greaseproof, acid-free, to meet Specifications JAN-B-121, and JAN-P-116 (Methods 1, unsealed package, 1A-1, 1A-2, 1A-3, and 1A-8) when Grade "A" is specified.

GREEN CORE Kraft Rap

Heavy duty (Type 1), or medium duty (Type 2). Kraft, polyethylene coated on one side (Class 1). Coating won't crack or get brittle. Heat seals at 250° F. Flexible to -40° F.

BALE WRAP

Meets Specification MIL-B-3149 for B-2 Bale Wrap. Used primarily in the packaging of clothing and equipment.

Write for samples and complete test data

MID-STATES Gummed Paper Company

2511 S. Damen Ave., Chicago 8, Ill.

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BRANCH OFFICES:

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FLOW • MARCH, 1953

FREE LITERATURE YOU CAN GET ON PACKAGING & SHIPPING PRODUCTS...

Corrugated Shipping Boxes:

A brochure published by Shelton Manufacturing Co., Inc., describes the advantages of its Tufwall corrugated shipping boxes. The company says its principle of construction is added cushioning strength only where it is needed. This is said to eliminate the necessity for extra liners and inserts with resultant saving in time, handling and storage.

Write in 290 on Reader Service Card

Short Case Sealer:

A specification sheet from Elliott Manufacturing Company gives complete data on the Elliott automatic short case sealer. This machine is said to require about one-half the floor space of conventional case sealers. Because of its compact design, it can be mounted on casters and moved about.

Write in 291 on Reader Service Card

Cutting Costs with Strapping:

Brainard Steel Division of Sharon Steel Corporation offers a bulletin which shows how the Brainard strapping system cuts the cost of packaging and handling lumber. The proper steel strapping system, according to the bulletin, is the key to fast material handling, since strapped loads of lumber can be handled just as easily as big cartons or boxes.

Write in 292 on Reader Service Card

Automatic Filling Scale:

A catalog sheet from Thayer Scale and Engineering Corp. illustrates this company's fully-automatic filling scale. This filling scale, Model 400N, net weighs to

CAN YOU SPOT THE 90¢ DIFFERENCE?



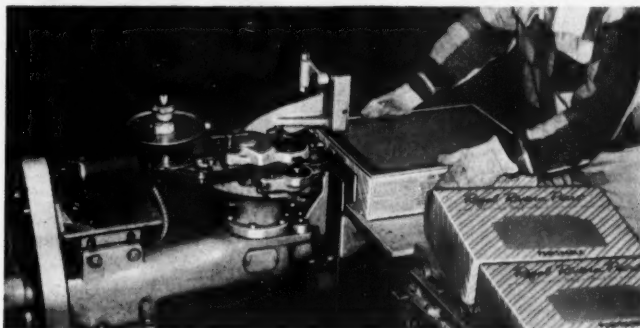
The two boxes are almost identical. One is tied with wire. The other shows how Bostitch field men can cut costs—the lid of the box is fastened to the bottom with just four wire staples.

By switching to Bostitch, this fruit packer was able to save 90¢ out of every dollar formerly spent for wire.

And that's not all. The packer further reports that his boxes look better, stack better, travel better. His

shipping-room employees are a lot happier. And his customers say the boxes are easier to open and the fruit is less likely to be bruised.

Whatever business you're in, whatever your present method for closing cartons or fastening materials, you'll do well to check into the services Bostitch offers. You'll be surprised how many different fastening jobs Bostitch can help you with.



AT THE END OF THE LINE, boxes are securely fastened with Bostitch S2B wire stitchers. Bostitch makes 30 different machines for doing all kinds of shipping-room jobs.

FREE BULLETIN describes 50 of the 800 Bostitch models used for wrapping or packaging. Just mark and mail the coupon.

THERE'S A BOSTITCH MAN NEAR YOU—300 field men in 123 cities in the U.S. and Canada. Bostitch service is always nearby.

BOSTITCH, 703 Mechanic Street, Westbury, N.Y.

Please send me a free copy of your bulletin on Bostitch stapling machines for shipping-room use.

I am particularly interested in a better and faster method for:

- | | | |
|---|---|---|
| <input type="checkbox"/> Assembling cartons | <input type="checkbox"/> Sealing corrugated wrappers | <input type="checkbox"/> Covering barrels |
| <input type="checkbox"/> Bottoming | <input type="checkbox"/> Repairing cartons for re-use | <input type="checkbox"/> Tackling |
| <input type="checkbox"/> Top-sealing | <input type="checkbox"/> Bag-sealing | <input type="checkbox"/> Other _____ |

Name _____

Company _____

Address _____

City _____ Zone _____ State _____

BOSTITCH®

AND FASTER
fastens it better with wire

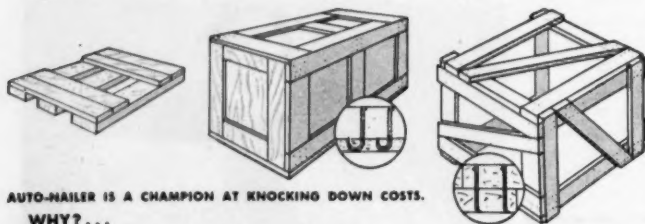
ALL TYPES OF MACHINES FOR APPLYING STAPLES
ALL TYPES OF STAPLES APPLIED BY MACHINES

Circle No. 4 on Reader Service Card for more information

Circle No. 115 on Reader Service Card for more information

A Boxing Lesson

... or ... KNOCK-DOWN YOUR PACKAGING COSTS WITH A CHAMPION



AUTO-NAILER IS A CHAMPION AT KNOCKING DOWN COSTS.

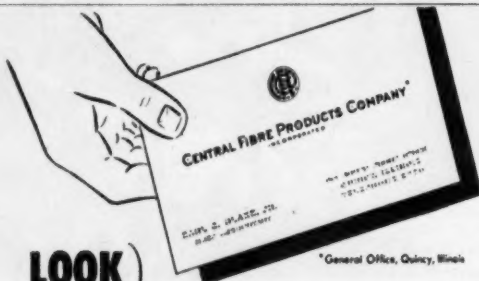
WHY?...

- 3-nails-a-second speed saves up to 75% in labor costs over hand nailing.
- No jigs necessary—Auto-Nailer will nail any pattern.
- Auto-Nailer is flexible—changing from one size (or design) to another requires no machine adjustment.
- Auto-Nailer makes and drives its own nails—3 a second—can be clinched or bradded, if desired.
- Auto nails will not back out.
- Auto nails reduce nail cost. Use only length that's needed. None bent, none dropped.
- More rigid—less racking. Shooks are auto nailed under 1,000 lbs. pressure effecting tremendous friction between the shook members.
- Use irregular or scrap lumber... even knots are auto nailed in stride.
- No splitting of wood—Affords close spacing or edge nailing.



Write for FREE Catalog.

AUTO-NAILER CO. • 265 MARIETTA ST., N.W., ATLANTA 3, GA.



LOOK
FOR
THIS
MAN

for Paperboard Materials
Corrugated Shipping Containers
Corrugated Specialties
Folding and Set-up Boxes
Produce House Supplies

Central Fibre is at Your Service!

IN 14 CONVENIENT CITIES

PAPERBOARDS

Corrugated Material—Linear
Board—Folding and Set Up
Standard—Cant. Tube and Cap
Shoe—Beer Case Partitions, Malt
Quincy, Illinois
Lansing, Michigan
Lansing, Michigan
Lansing, Michigan

CORRUGATED SHIPPING CONTAINERS

C. F. Sawyer Box Co., North Kansas City, Missouri
Laguna Box Co., Omaha, Nebraska
Holland Paper Box Company, Denver, Colorado
Holland Paper Box Company, Denver, Colorado
Holland Paper Box Company, Denver, Colorado
Holland Paper Box Company, Denver, Colorado
Holland Paper Box Company, Denver, Colorado
Holland Paper Box Company, Denver, Colorado

FOLDING AND SET-UP BOXES

American Folding Box Co., St. Louis, Missouri
Brace Carton Co., New York, New York
Continental Paper Products Co., Denver, Colorado
Laguna Box Co., Omaha, Nebraska
Holland Paper Box Company, Denver, Colorado
Holland Paper Box Company, Denver, Colorado
Holland Paper Box Company, Denver, Colorado
Holland Paper Box Company, Denver, Colorado

an accuracy of 1/10 pound and bags bulk materials (such as chemicals, plastics, feeds, grain, salts, sugars, abrasives and fertilizer) completely automatically. Performance is guaranteed to be within the designated accuracy limits for any desired weight from 25 to 200 pounds. In addition to both a photograph and parts diagram, the catalog sheet contains a complete description of the unit as well as full performance and specifications data.

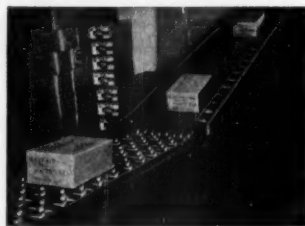
Write in 293 on Reader Service Card

Strapping In Use:

Information on material handling, product protection and new production techniques is contained in the current issue of "Confab", quarterly magazine published by Acme Steel Company. Among the features is the story of how one manufacturer cut handling costs 40 per cent by strapping refractory brick into palletless units for easy handling. Acme Steel's strapping machine, designed for high-volume shipping, also is described.

Write in 294 on Reader Service Card

"STREAMLINER" CONVEYOR SYSTEMS



SAVE TIME - MONEY - EFFORT

Ingenuity and efficiency at work... the "Ferguson" Inclined Conveyor is elevating wholesale groceries from gravity wheel conveyor. This arrangement, engineered specifically for plant and product, reduces handling costs, expedites materials through processing, storage and shipping areas. Such a cost-cutting conveying system can be engineered to meet your needs. Write for descriptive literature, on Gravity & Power Conveyors.

HARRY J. FERGUSON Co.

121 WEST AVE., JENKINTOWN, PENNA.
Circle No. 159 on Reader Service Card
FLOW • MARCH, 1953

Circle No. 74 on Reader Service Card for more information

moisture, dust and dirt. In requesting a copy of the catalog write in care of FLOW Magazine on your company letterhead.

Power Strap Dispenser:

Signode Steel Strapping Co. offers a bulletin featuring the Signode Model DP power strap dispenser for cutting straps to length. This mill type push button controlled dispenser is designed in models for $\frac{3}{4}$ inch, $1\frac{1}{4}$ inch and 2 inch ribbon wound coils of steel strapping. Installation, operation and maintenance instructions are listed.

Write in 296 on Reader Service Card

Tape Dispenser:

A catalog sheet from Better Packages, Inc., describes the Better Pack No. 50 tape dispenser. This package sealer handles $1\frac{1}{2}$ -inch wide rolls of 35-pound tape. Construction details are included.

Write in 299 on Reader Service Card

BE AS WISE AS AN OWL— don't pass up the chance to get help for your handling problems by filling out the Reader Service



Card in each month's issue of FLOW. It's simple to get the information you want and a few minutes spent can mean big savings to your plant.

FLOW • MARCH, 1953

Simplifies Bag Filling:

The Richardson Scale Co. announces a new two-color brochure describing four models of bag holders. These holders secure bags to hopper outlets during the filling operation. Nine photographs illustrate the operation details and recommended applications. Also included in the bulletin No. 0452 are detailed engineers drawings and specification tables of the air operated types.


Write in 298 on Reader Service Card

Gluing and Coating Machines:

Potdevin Machine Co. offers a brochure on gluing, cement, coating and laminating machines. It illustrates and describes a wide range of machines suitable for operation in many varied industries, and made for all types of hot and cold glues, latex, varnishes, lacquers, resins, paints and thermoplastics.


Write in 297 on Reader Service Card

B-G FOR SAFE HANDLING AND SHIPPING




MODEL A

Pallet Box is easily attached to any standard pallet by means of 4 corner irons and flat or round steel strap. Collapsible for storage and return shipment.




MODEL C

B-G Collapsible, hinged pallet box with drop-leaf panel for greater accessibility. All B-G pallet boxes can be furnished with top cover, if desired.



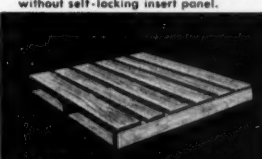
MODEL B

This collapsible pallet box has front opening for easy access to contents when stacked or in racks. Furnished with or without self-locking insert panel.




EXPANDABLE

B-G expandable pallet box, designed to withstand specified loads. Inexpensive, permitting discard after usage. Top cover, if desired.



PALLETS

Hardwood pallets made in all sizes and styles. Nailed with cement-coated drive screws.



TIGHT CORNER CRATE

The collapsible crate with the exclusive B-G Tight-Corner Hinge. Offers unusual rigidity and strength, yet light in weight. Easily assembled. Nail holes pre-drilled. Made up in 3 parts. Shipped collapsed.

For greater strength in stacking, materials handling and shipping, use Bigelow-Garvey Tight-Corner Collapsible Crates and Pallet Boxes. Designed to withstand transportation and handling hazards, B-G containers are extra strong for stacking and ideal for storage. Come 65% assembled. Shipped flat. Easily assembled using pre-drilled nail holes. Let us design sample container to meet your requirements.

30 YEARS PACKAGING EXPERIENCE



always check



General Office and Laboratory

Write for complete details and prices to...

BIGELOW-GARVEY

lumber company

326 W. HURON STREET • CHICAGO 10, ILLINOIS

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You can do it with One Man and a Prime-Mover!

Move your materials—bulk or packaged—with equipment not limited to specific jobs—Consolidate those intermittent handling jobs, outdoors or in confined areas—Supplement and relieve your specialized equipment and complete the mechanization of your materials handling.



If you're processing bulk materials—disposing of waste and scrap—using materials in maintenance or construction—shifting heavy maintenance equipment—maintaining grounds—or loading, unloading bulk or packaged goods from cars, toss your problems on the Prime-Mover and get the job done—quickly and economically.

Bucket and platform interchangeable in a jiffy.



Wisconsin engine powers an all enclosed gear drive to propel front wheels located under the load—(Up to $\frac{1}{4}$ ton.)

Passes through narrow aisles and doorways. Turns in own length. (8 ft.)

Does hard rugged jobs—up and down grades and over all types of surfaces.

THE PRIME-MOVER CO.
Muscatine, Iowa



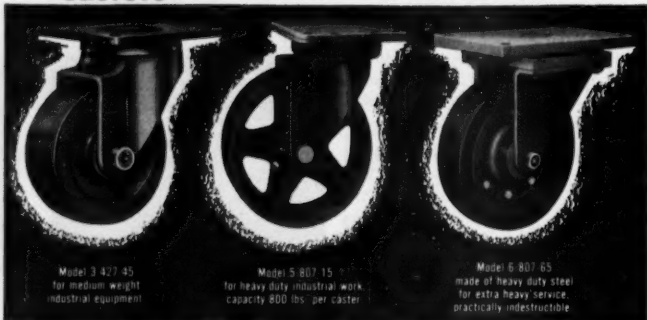
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120

Circle No. 103 on Reader Service Card for more information

FAST... EFFICIENT materials- handling

with 
casters

There's a COLSON Caster designed to meet every industrial materials-handling requirement—*exactly*. Old, bumpy hard-to-handle equipment can be restored to its original efficiency quickly and economically with COLSON Casters. Other COLSON materials-handling equipment includes hand trucks, barrel and drum trucks, platform trucks and lift-jack systems. Write us or consult the yellow pages (under "Casters" or "Trucks, industrial") for the COLSON office near you.



Write for new
catalog "COLSON
Trucks and Casters"

THE COLSON CORPORATION
TOLLEDA, OHIO
CASTERS • LIFT-JACK SYSTEMS • INDUSTRIAL TRUCKS

lift a

TON

LIKE A FEATHER with the
marforge *Revolutionary*
**LOAD-MOBILE
FORK TRUCK**

SPEEDY AND SAFE — Does ten times the work of one man... no fumes... no fire hazard.

POWERFUL AND PRACTICAL — Loads and unloads freight cars and motor trucks... piles under balconies and low ceilings... does over 100 jobs in industry.

The lightest electric rider-operated fork truck of 2000 lbs. capacity. Only 31" wide — less than 56" long, not including load. (Smaller than your desk.) Weighs only 2600 lbs. with battery. Tilting 68" telescopic mast stacks 8 ft. high. Speeds materials throughout plant. Handles pallets, skids, boxes, crates, dies, tools, etc. Price \$2,540 without battery. Write for complete information today.



**DESIGNED
FOR THE
SMALL PLANT
AND
WAREHOUSE**



56 YEARS IN THE MATERIALS
HANDLING BUSINESS
WRITE NOW FOR FULL DATA

Market Forge Company
EVERETT 49, MASSACHUSETTS

See us at the Materials Handling Exposition, May 18-22, Philadelphia
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FLOW • MARCH, 1953

GASOLINE ENGINES . . .

(Continued from page 73)

any convenient ground. With the ignition switch "on", crank the engine with the starting motor and check for spark. If a spark occurs, check the fuel system.

A faulty fuel system may be detected by disconnecting the fuel line at the carburetor. If fuel does not flow, check the fuel shut-off valve to make certain it is open, then check the lines for clogged condition. If fuel flows freely, remove the filter bowl and check for water or other foreign substance which may be in the fuel. If foreign substance is present in the fuel system, drain and clean the entire fuel system and add clean gasoline.

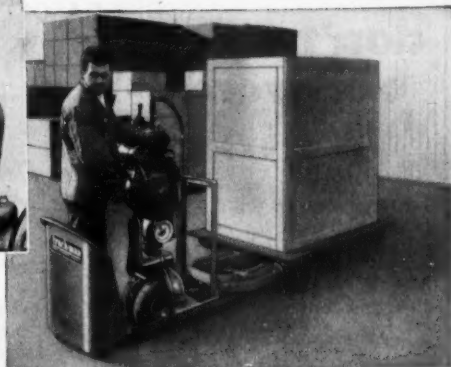
If, when checking for faulty ignition, no spark occurs, the distributor should be checked. Remove the distributor cap and inspect the cap for moisture or cracks and the rotor for defects. Replace any defective items. Inspect the points for burned condition and correct the gap clearance, according to the manufacturer's specifications.

If the points are burned, replace the points and condenser. If the points are all right, turn the ignition switch "on", break the contact points and check for spark. If no spark occurs, check the wiring to the distributor. If a spark occurs, the distributor is all right. Then reassemble the distributor and check the coil.

To check the coil, remove the coil wire at the center of the cap. Hold the wire $\frac{3}{8}$ inch from a convenient ground and crank the engine with the starting motor. If weak or no spark occurs, replace the coil. If a spark



Now finish it—do it again and you're fired!



NOW

truck-man

WITH POWER LIFT FOR GREATER SAVINGS

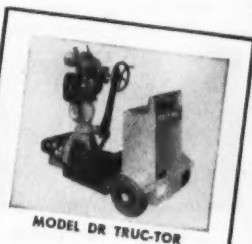
Successfully tested in the heaviest industries, two Truck-Man models are now ready to cut your costs still more with power lift. Hundreds of Truck-Man trucks with much smaller load capacities and only hand pumps are more than earning their way throughout the nation. Now Power Lift increases this efficiency while retaining the advantages of the agile standard models. A flick of the wrist and the new power lift raises or lowers the load instantly. Once load is raised from the floor, truck can start as balance of lift can be made in transit. 15-40 seconds are saved each trip — more trips per day — more work with less effort.

SIX VERSATILE MODELS

NEW MODEL DHP — Heavy Duty Skid Lift with power pump, 4500 lb. capacity — scoots through narrow aisles, up inclines and around sharp corners with a full load, three shifts a day with ease.

NEW MODEL DFP — 3000 lb. capacity, power lift Pallet Toter — hustles those heavy palletized loads around the plant in jig time. Easily does the work of units costing 3 to 5 times as much.

MODEL DH — 4500 lb. Skid Lift with Hand Pump. **MODEL DF** — 3000 lb. Pallet Toter with Hand Pump. **MODEL DT** — 2000 lb. Platform Utility for intra-plant messenger service, parcel delivery or other manually handled loads. **MODEL DR** — Truc-Tor for towing those heavy cargo trains — up to 6500 lbs. on dry level concrete.



MODEL DR TRUC-TOR



MODEL DF PALLET TOTER

Clip and Mail This Coupon For Further Information

truck-man
Div. of the Knickerbocker Co.
582 Liberty Street • Jackson, Michigan

Please send catalog and further information on:

<input type="checkbox"/> Model DHP	<input type="checkbox"/> Model DFP	<input type="checkbox"/> Model DH	<input type="checkbox"/> Model DF	<input type="checkbox"/> Model DT	<input type="checkbox"/> Model DR
------------------------------------	------------------------------------	-----------------------------------	-----------------------------------	-----------------------------------	-----------------------------------

NAME _____

TITLE _____

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CITY _____ ZONE _____ STATE _____

TRUCK-MAN OWNERS

Convert your present Truck-Man Trucks with the Packaged Power Lift Conversion Unit.
New larger diameter lift cylinder and all other parts required by change are included. Easily and quickly installed.

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don't take our word for it!

Just try a
GRIPPER WOVEN WIRE SLING
in your own plant and see if you
don't agree it's the most amazingly
versatile **MATERIALS HAN-**
DLING TOOL to hit the market!
Use your Gripper sling for—



LIFTING

compact, heavy loads to and
from delivery vehicles



MOVING

unwieldy long members into
and out of storage racks



POSITIONING

parts for machining or finishing
or for any other routine or special
sling problem...anywhere in the plant

Gripper slings won't snarl or
tangle, won't cut operator's hands
with broken wires. They'll lift any
load with ease and safety. Each
sling can be used in basket or
choke hitch.

WANT TO KNOW MORE? See
your mill supply, safety equip-
ment or materials handling
dealer...or write for illustrated
literature and application data.



**The Cambridge
Wire Cloth Co.**
Dept. W • Cambridge 3, Md.



Distributors—write for open territory data!
Circle No. 12 on Reader Service Card
122

GASOLINE ENGINES . . .

(Continued)

occurs, remove and check the spark
plugs.

Spark Plug Performance

Spark plug performance has a very
important bearing on engine opera-
tion and economy. Therefore, it is
necessary that the correct type of
spark plug be selected for the par-
ticular engine operation.

Spark plugs are made in various
types, and each type has a definite
purpose which depends on the service
required of the engine. For instance,
one engine may be operated continu-
ally at or near full load and would
require a colder type spark plug. An-
other engine of the same type, which
is operated at part load or with long
periods of idling, would require a
hot type spark plug.

A cold plug has a low insulator
seat, which quickly carries the heat
away from the insulator and keeps
the spark plug insulator and points
cooler. This results in longer plug
life when the engine is in operation
for long periods at full load.

A normal plug has a higher in-
sulator seat, which allows the in-
sulator to retain a normal amount
of heat. This type plug should be
used when the engine is operated at
intermediate and variable loads and
speeds.

A hot plug has a very high insula-
tor seat, which permits the core to
retain the maximum amount of heat.
This type of spark plug should be
used when the engine is operated at
part load with intermittent periods
of idling.

Spark Plug Maintenance

Spark plug maintenance is simple,
easily accomplished and should not
be neglected.

After removal of the ignition wires,
select the correct size socket wrench
and loosen each plug approximately
two turns. Then, with compressed air
or a brush, clean the dirt from around
the plug. This is important, as the
dirt may fall into the cylinders and
cause damage when the engine is
started.

When the dirt has been removed
from around the plugs, remove them
from the engine and carefully exam-
ine the condition of the points and

**SAVE EQUIPMENT
SAVE FLOORS
SAVE MONEY
and TIME**

**REDUCE THE
OVERHEAD
THAT IS
UNDERFOOT**



Write for
*Free Darnell
Manual*

**Darnell
Casters
&
E-Z ROLL
WHEELS**

DARNELL CORP., LTD.
DOWNEY, (Los Angeles County) CALIF.

60 Walker Street, New York 13, N.Y.
36 North Clinton, Chicago 6, Illinois

Circle No. 165 on Reader Service Card
FLOW • MARCH, 1953

insulator.

The normal condition of a plug that has been carefully selected for a particular type of service will have dry, light to dark brown, flaky deposits of combustion products which, when exhibited on each spark plug of a set, indicate a balanced ignition and combustion condition.

A burned or overheated plug is usually identified by dry, shiny, glassy deposits on the insulator, or cracks in the insulator tip. This condition is the result of (a) too lean an air-fuel mixture, (b) inefficient engine cooling, (c) too hot a spark plug for the service, (d) improper installation or (e) compression leakage through the plug.

A gas fouled spark plug is usually identified by a black, dry, fluffy deposit. This condition is the result of (a) too cold a plug for the service, (b) prolonged periods of engine idling, (c) too rich an air-fuel mixture or (d) spark plug gap set too close.

An oil fouled plug is usually identified by a wet, black, shiny deposit. This condition may be caused by (a) too cold a plug for the service, (b) distributor trouble or faulty ignition cables, (c) weak coil or battery, (d) spark plug gap too close or (e) worn piston rings or pistons.

Reinstalling Plug

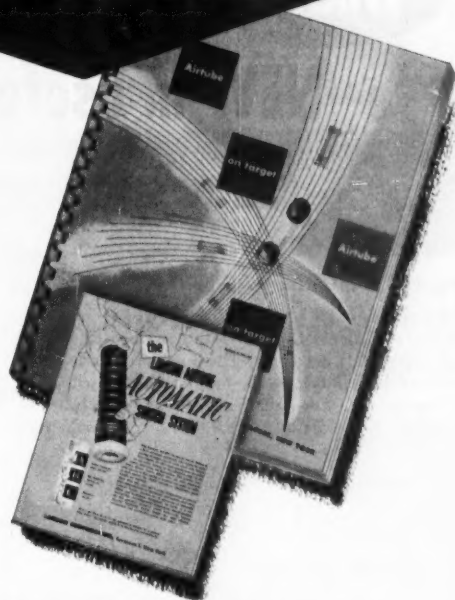
Before reinstalling spark plugs, they should be cleaned and have the point gaps adjusted. Always adjust the points by bending the ground electrode. Never attempt to bend the center electrode, as this may chip or crack the insulator and render the plug inoperative.

The plug is considered properly tightened when the gasket is compressed to approximately one-half its original thickness. If a spark plug is tightened too tight, the body may become distorted and crack the insulator.

If the plug is too loose, it may allow exhaust gases to escape around the threads and at the same time the heat will not be carried away from the plug fast enough to prevent the plug from becoming damaged from excessive heat.

FLOW thanks the following for their help in preparing this article: The Buda Co.; Chrysler Corp.; Continental Motors Corp.; Hercules Motors Corp.; Minneapolis-Moline Co.; Townmotor Corp.; The Yale & Towne Mfg. Co.

get the facts



60 informative pages on **LAMSON AIRTUBE SYSTEMS**

...gives you profitable ideas for using pneumatic tube systems, both conventional and automatic—including dimensional drawings, architects' data, typical installations, case histories and lots more—all in two handy catalogs.

We have copies for you . . . just clip this coupon to your signed letterhead and mail.



LAMSON CORPORATION

1403 Lamson Street, Syracuse 1, N. Y.

Gentlemen:

Without any obligation on my part, please send me my copies of the Lamson Airtube Catalog and the Lamson Automatic Switch System Bulletin.

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Company _____

Address _____

City _____ Zone _____ State _____ ☎ 8803

Circle No. 52 on Reader Service Card for more information

What's

NEW in useful FREE literature

The publications featured on these pages were written by experts. They are FREE publications. To obtain them use the postcard bound into this issue.

Industrial Containers:

The various types of industrial containers manufactured by G. B. Lewis Company are described in a booklet offered by this company. These uniformly-sized containers can be handled singly or in multiples with auxiliary equipment. Top rails are grooved over slat ends, and joints are dovetailed and corners reinforced with 3-way metal plates.

Circle No. 222 on Reader Service Card

Axle Load Scales:

The complete line of heavy-duty Howe axle load scales for checking weights on each axle of motor trucks and trailers is illustrated and described in an 8-page folder from The Howe Scale Company. Complete specifications and pit dimensions are listed for 9 standard axle load scales with a capacity range of 15, 20 and 30 tons.

Circle No. 223 on Reader Service Card

Right Truck Selection:

A feature incorporated in the Baker-Raulang Company's new catalog No. 54 is a special section entitled, "How To Select The Right Fork Truck For Your Handling Job." Also included in the catalog is a complete description of the BMaker line of fork trucks from 1,000 to 10,000-lb. capacities.

Circle No. 224 on Reader Service Card

Contractors' Pipe Dream:

In a recent issue of The Payloader, monthly publication of the Frank C. Hough Co., an excellent report appears on the accomplishments of the Hough Payloader in making easy work of a Colorado pipe-laying job. According to the article the Payloaders first scooped out the trench and then were adapted to be used as cranes to lower the 60-inch concrete pipe sections into positions.

Circle No. 225 on Reader Service Card

Conveyor Catalog Revision:

Standard Conveyor Co. has announced a revision of their No. 63B catalog. The new 28-page publication may be obtained by writing for catalog No. 63C, which contains the latest information on Standard's complete line.

Circle No. 226 on Reader Service Card

Electrified Lumber Mills:

Electrification of all processing operations in the lumber industry is described in a new 50-page book available from the Westinghouse Electric Corp. Freely illustrated with on-the-job photographs, this book takes the reader on a tour of a typical lumber mill, stopping to describe some 21 phases of the application of electric power. In writing specify book No. B-5299.

Circle No. 227 on Reader Service Card

Simplicity in Weighing:

A pictorial folder showing applications of simultaneous weighing and hoisting operations is available from Hydroway Scales, Inc. The folder pictures various models and their specifications and depicts numerous uses applicable in numerous varied industries.

Circle No. 228 on Reader Service Card

Truck Operator's Classroom:

A practical short course in lift truck operation may be had by reading the new 24-page handbook, How To Operate A Lift Truck," available from the Hyster Co. Utilizing color cartoons the book strives to instruct operators in the proper modes of operation, and at the same time cautions against dangerous procedures.

Circle No. 229 on Reader Service Card



**Springs
Cotton Mills**



**installs UNISTRUT®
Pallet Racks**

**to increase storage capacity, speed finished
goods handling, improve inventory control**

**Problem of efficiently storing and handling great
quantities of bales and cartons solved quickly,
easily, at low cost, by large textile manufacturer**

The makers of nationally famous SPRINGMAID® cotton fabrics find UNISTRUT racks increase storage capacity, speed order filling and reduce damage to goods. These adjustable cantilever type pallet racks were recently installed on three complete warehouse floors at the Grace Bleachery, Lancaster, S. C., for the storage of finished goods.

With UNISTRUT framing there is no drilling, no welding, no special tools or equipment needed. Engineering is simplified—all you do is cut channel to size and bolt fittings in place. It's easy to work with and provides a construction material that can be used again and again without additional investment. You can build any type rack with UNISTRUT framing. Let us make a free rack survey for your business.



Write today for your **FREE** copy of 24-page Catalog No. 600—"Racks you can build with UNISTRUT metal framing." Illustrates 46 different kinds of racks, and includes drawings and complete ordering information.

1. Back view of rack—shows construction details. Loosening of bolts permits adjustment up or down to desired level.

2. Double entry rack allows 3-tier storage—utilizes all space to ceiling, has great strength without bulk.

3. Front view of rack illustrates cantilever arrangement of horizontal framing members and how they are mounted to vertical members.

4. Emphasizes wide, clean aisle to permit fast, easy handling of neatly stored, easily identified cases.

The new Springs Cotton Mills plant at Lancaster, S. C. (sketched above), was designed and engineered by Robert and Company Associates of Atlanta, who also designed the UNISTRUT cantilever pallet racks shown here.



**Basic Components of
the UNISTRUT Metal
Framing System**



Distributors and Warehouse Stocks in Principal Cities.
Consult your Telephone Directories.

U. S. Patent Numbers
2327587 2327815 2345650
2363382 2380379 2405631
2541908 Other Patents Pending

UNISTRUT PRODUCTS COMPANY
1013 W. Washington Blvd., Chicago 7, Ill., Dept. A3

Please send the items
checked below, with-
out obligation:

☐ Rack Catalog No. 600

☐ UNISTRUT Sample

Name _____

Company _____

Address _____

City _____ Zone _____ State _____

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Cesco
Tote Boxes
... Do Your Job
• EFFICIENTLY
• EASILY
• ECONOMICALLY
On Conveyors, Pallets, Hand Trucks,
Skid Platforms, or what have you.

- Ruggedly constructed of high grade hardwood lumber
- Special steel reinforced features of slat coated prime stock
- Self stacking
- Convenient hand holes for positive grip
- Blending rivets PLUS corner lock style yields maximum rigidity

Depending upon the material packed and the handling method the stack sizes listed below will accommodate loads up to 200 lbs.; possibly greater.

CESCO'S 3 STANDARD BOXES
(Prices Net-F.O.B. Factory)

Lots of	No. 1	No. 2	No. 3
2000	\$1.80	\$2.05	\$2.20
1000-1999	1.82	2.07	2.22
500-999	1.84	2.09	2.24
250-499	1.89	2.14	2.29
100-249	1.94	2.19	2.34

No. 1 size—(I.D.)—14 $\frac{1}{2}$ " x 11 $\frac{1}{2}$ " x 9"
No. 2 size—(I.D.)—18 " x 11 $\frac{1}{2}$ " x 9"
No. 3 size—(I.D.)—20 " x 11 $\frac{1}{2}$ " x 9"

OTHER CESCO PRODUCTS

Wire Baskets • Tote Trays
Special Pallets



CESCO
CONTAINER CO.
General Offices: 415 Fifth Ave., New York 17, N.Y.
Phone: MU 3-0811 • Telex: 1001000 CESCO

Circle No. 7 on Reader Service Card
126

Plant Layout Hints:

The third in a series of booklets designed for administrating and operating executives, "Plant Layout" is available from Wheeler Associates, Inc. The booklet covers such phases as The Work Area, How to Develop a Better Layout, Layout Planning, Work Area Planning and Basic Principles of Good Layout.

Circle No. 230 on Reader Service Card

Easy Sling Selection:

The Chain Division of The McKay Company has completed a chart designed to make sling chain selection easier, simpler and safer. The chart identifies the various types of sling chains and the different attachments which may be used on single, double, triple and multiple slings for lifting any given load. It gives specifications, length and width of links, number of links-per-foot, proof-test and other data required by chain users and buyers.

Circle No. 231 on Reader Service Card



HOUNDS FOR PUNISHMENT!
BULLDOG PALLETS

BULLDOG PALLETS

We can deliver Bulldog Pallets almost anywhere in the U.S. at competitive prices. For convincing proof, write or wire us for a quotation stating quantity, specifications and desired delivery date.

BULLDOG PALLET CO.

PALLETS • PALLET BINS
EXPENDABLE PALLETS
PALLET SHOOK
PACKING CRATES

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P.O. BOX 547
NEWARK,
CALIFORNIA

Circle No. 5 on Reader Service Card

MADESCO
Heavy Duty Blocks
PROTECT YOUR WIRE
ROPE INVESTMENT



Longer life for your wire rope can be secured with Madesco sheaves properly machined for the size of rope used. Madesco sheaves and blocks equipped with anti-friction bearings and bronze bushings combined with quality workmanship assure smooth performance.

Special blocks for special needs made to order. A copy of our catalog is yours on request.



MADESCO
TACKLE BLOCK
COMPANY
EASTON, PENNSYLVANIA

Over a quarter century of service

Circle No. 98 on Reader Service Card
FLOW • MARCH, 1953

Handling Equipment Film:

Barber-Greene Company has made available a 16mm sound-color film describing the entire line of Barber-Greene equipment for material handling and processing. Running time is approximately 22 minutes. Entitled "Specialty: The Better Way", introductory remarks describe Barber-Greene as an organization of specialists in design and manufacture. Prints are available on free loan for showing to interested groups.

Circle No. 252 on Reader Service Card

Need an Elevator?

"Vertical Transportation by Otis" is a general catalog from Otis Elevator Company, and it describes the complete line of Otis equipment and services, including all types of elevators and dumbwaiters. Photographs and line drawings illustrate the text, and tables provide dimensions and engineering data.

Circle No. 253 on Reader Service Card

Grommet V-Belt:

The "Texrope" grommet V-belt is described in a bulletin released by Allis-Chalmers Manufacturing Company. This belt is made without a splice. According to the bulletin, it is cooler running, is shock absorbent, offers less slip and more grip. Cross section illustrations show how the belt provides a high gripping pressure under all load conditions.

Circle No. 254 on Reader Service Card

Casters and Wheels:

Buffalo Caster & Wheel Corporation has published Catalog BC-53, which covers the company's entire line of industrial casters and wheels.

Circle No. 255 on Reader Service Card

Gravity Conveyors:

A 16-page bulletin describes several types of gravity conveyors manufactured by the Packing Equipment Division, Food Machinery and Chemical Corporation. The four complete lines of gravity conveyors described

and illustrated include: standard roller conveyors, light duty roller conveyors, staggered wheel conveyors and side wheel conveyors.

Circle No. 256 on Reader Service Card

Dump Bodies and Hoists:

A catalog describing the Galion line of dump bodies, hydraulic hoists and end-loaders is offered by The Galion Allsteel Body Company. A feature of the catalog is a handy refer-

ence table which permits the user to select the exact hoist and body best suited to his needs.

Circle No. 257 on Reader Service Card

Steel Shelving:

A 20-page Penco Steel Shelving catalog, No. S-300, presents a wide line of adjustable steel shelving. Offered by Penn Metal Corporation of Penna., it features the design flexibility of the shelving and the interchangeability of parts which afford

Here's HAND TRUCK News!



**ONLY
AMERICAN
GIVES YOU
THIS
GUARANTEE**



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For Bulletin

Materials Handling by



Complete line of Pressed-Steel Hand Trucks,
Barrel Cradles, and Steelite Industrial Wheels

The American Pulley Company
4290 Wissahickon Ave.
Philadelphia 29, Pa.

Gentlemen:

Please send me your latest bulletin on American Hand Trucks.

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Circle No. 155 on Reader Service Card for more information



LONGER
*Service Life...
at Lower Cost!*

Your products are judged on over-all performance... including the wheels they roll on! For dependable quality, at moderate cost, it will pay you to investigate performance-proved Goddeyne Wheels! Built to stand up under continuous use and rough handling, Goddeyne wheels give positive assurance of extra-long service life. 6" to 16" O.D. meets design requirements of virtually all materials handling and industrial equipment, as well as a wide range of farm operating equipment. Special sizes and types are available on request.

**BOLTED WHEEL CONSTRUCTION
EASY TIRE REPLACEMENT**

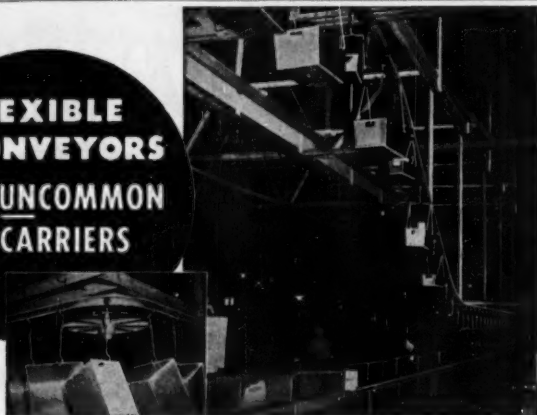
Write For New Goddeyne Catalog • Send Specifications For Quotation

GODDEYNE WHEEL PRODUCTS (formerly Kayel Wheel)
1300 N. McLELLAN ST. • BAY CITY, MICHIGAN

GODDEYNE WHEELS ARE AVAILABLE WITH...

- Thru-Hub Bearings
- Positive-Lock Hubs
- Drive Hubs
- Semi-Pneumatic or Solid Rubber Tires
- Roller, Ball, Oilite, Bronze Bearings

**FLEXIBLE
CONVEYORS
UNCOMMON
CARRIERS**



FLEXIBLE TROLLEY CONVEYORS

reflect design and installation features of unusual quality.

- complete systems, 3" or 4" • carriers and attachments
- guards and safety devices

INSTALLED BY SKILLED ERECTORS



FLEXIBLE CONVEYOR COMPANY

1624 McDonough Street Sandusky, Ohio

Manufacturers of a complete line of Conveying Equipment

Circle No. 16 on Reader Service Card for more information

a virtually unlimited number of combinations of types and sizes.

Circle No. 258 on Reader Service Card

Over-Running Clutches:

Literature from Formsprag Company describes the over-running clutches made by this company. Formerly sold by Morse Chain Company, these clutches have been known as Morse-Formsprag Clutches. Formsprag will now handle its own distribution.

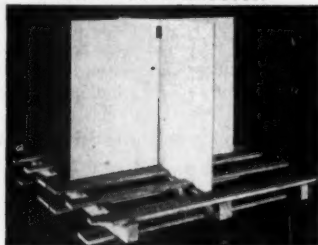
Circle No. 259 on Reader Service Card

Traffic Safety Mirror:

A traffic safety mirror is described in literature from Silver Troy Mirror Company, Division of Silver Troy Industries. These convex mirrors are shipped complete with adjustable swivel backs, and are mounted at aisle intersections and other blind spots.

Circle No. 260 on Reader Service Card

**PREVENTS MERCHANDISE
DAMAGE CAUSED BY
WEIGHT COMPRESSION**



New revolutionary HECO is the simplest, lowest-cost pallet stacker on the market!

Set up or knocked down in seconds by one man • Spacer stacks flat when not in use • preserves storage space • Pallet can be used without spacer • Spacer will support 6,000 pounds, thus allowing loaded HECO pallets to be stacked on top of each other • Costs half of similar type wood and steel devices



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West of Rockies:
**HAMERSLAG
EQUIPMENT CO.**
45 Elmira Street
San Francisco 24, Calif.

Circle No. 25 on Reader Service Card
FLOW • MARCH, 1953

Torque Converter Information:

The Torcon Corp. has announced the publication of a new bulletin No. TC-649, describing the Torcon hydraulic torque converters for medium and heavy-duty applications. The new bulletin features unit size selection charts based on engine r.p.m. and net horsepower as well as more comprehensive data on the purpose, construction and operation of converters.

Write in 277 on Reader Service Card

A Basket With A Purpose:

Literature and even a test sample of the Jaxon Production Carrier, wire mesh baskets, are available from Jaxon Wire Products Co. Designed to step up material handling in the gear and metal parts industries, the basket's open mesh construction allows draining of oil and other liquids when parts are removed from machines or washing operations.

Write in 278 on Reader Service Card

Speed Reducing Data:

An engineering bulletin A-614-A released by Dodge Mfg. Corp. provides complete data on Dodge's line of Torque-Arm Reducers and Overload Releases, which are designed for use with the reducer. It is profusely illustrated with numerous cut-away photos and drawings.

Write in 279 on Reader Service Card

Move It Easier On Wheels:

An elaborate catalog No. 49-A is available from the Kilian Mfg. Corp., covering its complete line of ball-bearing casters and wheels. Besides a wide selection of stock types, Kilian maintains special models will be developed to individual requirements wherever necessary.

Write in 280 on Reader Service Card

Electric Power Distribution:

Feedrail Corp. has released a new 4-page color folder on its trolley busway power distribution system for single and three phase installations. The folder points towards the desirability for the source of power to be able to move with the equipment in many applications.

Write in 281 on Reader Service Card

Built For Appliance Handling:

An informative catalog sheet prepared by the Dutro Company presents its line of special hand trucks designed especially for ease in the handling of heavy appliance and furniture. The literature explains how Dutro trucks fulfill the need for trucks built to handle such items as refrigerators, stoves and radios without danger of marring enameled or veneer finishes.

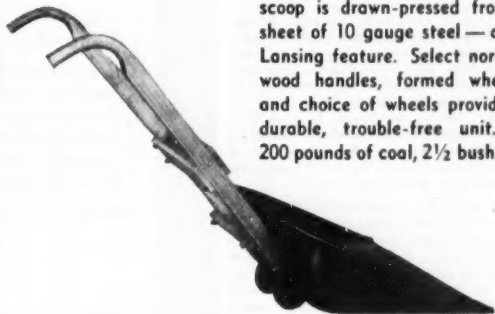
Write in 282 on Reader Service Card

For Rapid Handling of Bulk Material



"CLIMAX" Scoop Truck

Ideal for one-man movement of grain, coal, or other bulk stored material particularly from freight cars or trucks. Increases speed six to ten times. The scoop is drawn-pressed from a single sheet of 10 gauge steel — an exclusive Lansing feature. Select northern hardwood handles, formed wheel housing and choice of wheels provide a strong, durable, trouble-free unit. Capacity, 200 pounds of coal, 2½ bushels of grain.



Ask Your Distributor or Write For Details Today

LANSING CO.
LANSING MATERIAL HANDLING EQUIPMENT

LANSING, MICHIGAN

Since 1881



HAND TRUCKS



PLATFORM TRUCKS



TRAILERS



LIFT JACK SYSTEMS



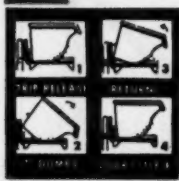
BARROWS

Circle No. 136 on Reader Service Card for more information

Reduce **FATIGUE**

Use Self-Dumping Containers

Step Up **PRODUCTION**



*Save 50%
Labor-Time*

with

ROURA Self-Dumping **HOPPERS**

*Imitated by Many—
Not Equaled by Any*

—they pay for themselves



Only ROURA Has The Exclusive
PATENTED Instant Release Handle

Handling wet or dry, hot or cold, bulky materials quickly and easily, the ROURA is simple to operate—only one man is required for distributing and unloading—and he does this in much less time than ordinarily required under old-fashioned manual methods. Thousands of Roura Hoppers (which fit any standard fork or platform lift truck) are in constant daily operation, serving and saving for such firms as Owens-Illinois Glass, Corning Glass, National Fireproofing, General Motors, Ford, Chrysler, American Brake Shoe, General Electric, Westinghouse, Western Electric, American Steel Foundries, International Harvester, John Deere, etc.

By a simple lift of the exclusive release handle, the ROURA HOPPER dumps, rights and locks itself securely. Sizes— $\frac{1}{2}$, $\frac{3}{4}$, 1, 1 $\frac{1}{2}$ and 2 cubic yards; the ROURA HOPPER can also be designed for flat trucks and in other sizes to meet specifications. Also, it can be equipped with special flanges that permit stacking to desired tiers for storage or future distribution of materials—conserving valuable floor space. Priced below all competition, the ROURA will quickly pay for itself many times over.

—Can Be Coated With Acid-Resistant Paints.
Write today for detailed brochure, "In Dollars & Sense."

ROURA IRON WORKS, Inc.

1411 Woodland Ave.

Detroit 11, Mich.

Circle No. 64 on Reader Service Card for more information
130

Class H Insulation Uses Broadened:

A new leaflet prepared by the Dow Corning Corp. explains numerous specifications of Class H insulation components and their varied uses. While written primarily for electric repairmen the folder contains much useful information for anyone concerned with the economical performance of electric motors under difficult operating conditions. Newly developed Silicones are said to be the basis for the improved quality of Class H insulations.

Write in 261 on Reader Service Card for more information

Barrel Plating Developments:

A new bulletin released by Frederic B. Stevens, Inc. describes several special applications of its automatic barrel plating machine. One illustrated application in particular shows the process of phosphate coating of mortar shells. This bulletin No. 60 was available at the recent National Metal Show, but additional copies may be had upon request.

Write in 262 on Reader Service Card for more information

Vynlite Fortified Coatings:

Additional data for paint and industrial coatings manufacturers on the wide compatibility of Vynlite resin VAGH with other film-forming materials is presented in a revised pamphlet, "Vynlite Resins - Technical Release No. 6." It is published by the Bakelite Co., a division of Union Carbide and Carbon Corp.

Write in 263 on Reader Service Card for more information

Vapor-Free Compression:

Literature describing the Oilfreair and Oilfregas compression pumps is available from the manufacturer, Pennsylvania Pump & Compressor Company. A steel-backed carbon cylinder liner is used which is said to guarantee compressed air or gas which is entirely free of oil or oily vapors.

Write in 264 on Reader Service Card for more information

Prolonging Machinery Life:

Gulf Oil Corporation has compiled a lubrication and maintenance guide for contractors and allied equipment users. The 95-page booklet expounds the theory that proper lubrication prolongs the life expectancy of heavy, costly machinery. The information contained covers motors, geared mechanisms, bearings, wire cables, electrical and cooling systems.

Write in 265 on Reader Service Card for more information

AD LITERATURE

Continued

Shovel-Cranes:

A 24-page catalog describing its 51 Series shovel-cranes is offered by Link-Belt Speeder Corporation. The illustrated catalog, No. 2428, covers the company's complete line of 1/2-yard shovel-cranes, including the crawler-mounted, truck-mounted and wheel-mounted models. Included is data covering the upper machinery, crawler, truck and wheel-mounted lower mechanisms for each model.

Circle No. 241 on Reader Service Card

Fork Truck Applications:

The theme of a "100% Towmotor town" characterizes the basic content of the current issue of Towmotor Corporation's house organ, "Handling Materials Illustrated". Four articles are features, each of which details the application of this company's fork trucks in as many different plants.

Circle No. 242 on Reader Service Card

Adjustable Steel Ramp:

Hohl adjustable ramps, built of structural steel beams and heavy floor plate, are described in a 4-page bulletin from Hohl Machine and Conveyor Company. These ramps are said to answer the problem of many plants in loading and unloading trucks of different bed heights. Sizes and specifications are included.

Circle No. 243 on Reader Service Card

Ram and Fork Trucks:

Heavy-duty ram and fork trucks, in capacities of 12,000 to 60,000 pounds, are the subject of a brochure released by Elwell-Parker Electric Company. Action pictures show these trucks in use, and 11 models are described. Specifications are included.

Circle No. 244 on Reader Service Card

Conveyors and Accessories:

A 12-page catalog from Speedways Conveyors, Inc., lists this company's gravity wheel and roller conveyors and accessories and portable belt conveyors. Various models are illustrated and described, with specifications.

Circle No. 240 on Reader Service Card



Two belt conveyors handle in-process forms; accumulation conveyors (diagonal spur sections) hold orders for release to shipping; main line roller conveyor takes cartons to stapling operation and on to shipping room.

BUSCHMAN CONVEYORS

save \$10,000 to \$12,000 annually
at UARCO Incorporated

*Over a third-mile of belt and roller conveyors
replaces skid system . . . save 2,000 square feet of
floor space . . . 30% in man hours!*



After stapling, cartons are elevated by Belveyor to the gravity roller conveyor which carries them to shipping room.

Typical of "pay-for-themselves" records set by BUSCHMAN Conveyor installations is this one in the Chicago plant of UARCO Inc., noted business form manufacturer.

A main powered roller conveyor skirts the printing area, two belt conveyors and forty-six accumulation gravity conveyors achieve a 30% cut in time over the former skid load system.

From long experience, BUSCHMAN Engineers can suggest time, money and space saving equipment for the handling of your materials from receiving through process, assembly and finishing to storage or shipping. BUSCHMAN Conveyor installations are complete to meet your specific needs—dictated by your products, process and space available.

Representatives
in Principal Cities

CANADIAN LICENSEE:
James A. McKechnie, Ltd.
Toronto 13, Canada



Write for
Bulletin No. 60

THE E. W. BUSCHMAN CO.
4450 Clifton Avenue
Cincinnati 32, Ohio

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Circle No. 107 on Reader Service Card for more information

COMPARE!

Cushman gives you **MORE!**

More Versatility—
More Mileage—
More Convenience—

and at
LESS COST!

TOTAL
OPERATING
COST

3/4¢
per mile



Cushman

TRUCKSTER

is your best buy in light hauling equipment. Sturdy—with a capacity of up to 400 pounds—maneuverable and versatile, the Truckster offers low initial cost, low maintenance and low operating costs. Replace that expensive-to-operate heavy cargo equipment with the Cushman Truckster and cut material handling costs as much as 50 per cent.

Write for FREE Illustrated Literature

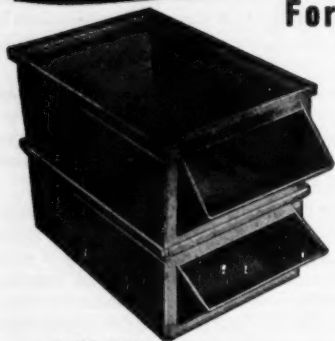
See your nearest Cushman Dealer for FREE demonstration.

CUSHMAN MOTOR WORKS, INC.

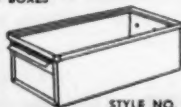
DEPT. F-2 900 NO. 21st. St. Lincoln, Nebraska

Engineered Containers

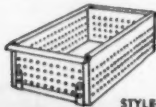
**For Economical, Fast,
Parts Handling**



PILING BOXES



STYLE NO. 8



STYLE NO. 8

No matter what type of small parts you are handling, there is a TELDAY container specifically engineered to meet your needs. If you want a container that is liquid-tight, if you have need for a shop box that can be used for carrying as well as storing, if the container you buy must double as a feeding unit at work stations, there is a TELDAY Engineered Container that is made just for this purpose. And there are dozens of other models that are also available for immediate delivery.

Write for free literature illustrating and describing our complete line.

Telday

MANUFACTURING CO.

2036 E. 22nd STREET • CLEVELAND 15, OHIO

Circle No. 55 on Reader Service Card for more information

Gate Operator:

Literature from Robot Appliances, Inc., contains illustrations, descriptions and specifications on the Robot operator for gates. It shows how this electronically controlled gate operator can be installed to operate any type of gate.

Write in 266 on Reader Service Card

Totally-Enclosed Motor:

Bulletin No. 1784 from U. S. Electrical Motors Inc. describes this company's totally-enclosed motor. This colorful bulletin contains photos, cut-away views and descriptive text.

Write in 267 on Reader Service Card

Slip-On Pipe Fittings:

The Hollaender Manufacturing Company offers an 8-page bulletin describing its Nu-Rail slip-on pipe fittings. These fittings are specially designed to facilitate a quick, easy and economical method of pipe fit-

MOVE MORE FOR LESS WITH MICRO LEVER-DOLLIES

Made in Three
Handy Sizes

Usually Purchased and
Used in Pairs

Reasonable
in Price and
Guaranteed

Finest
Materials
and Work-
manship.

After
First
Use You'll
Wonder
How You
Ever Got
Along With-
out Them

Write for
complete
descriptive
circular



MICRON, INC.,
Dept. F
BETTENDORF, IOWA

Circle No. 22 on Reader Service Card
FLOW • MARCH, 1953

ting which substantially reduces pipe cutting, and eliminates threading or welding.

Write in 268 on Reader Service Card

Magnesium Car Loading Ramp:

Penco Engineering Co. offers a bulletin on Penco magnesium ramps. Featured are the Penco flared car loading ramps and the Penoo two-section ramps for truck docks. Specifications include: capacity, width, length, height differential and weight.

Write in 269 on Reader Service Card

Fibre Boxes and Trucks:

Catalog 49B from Fibre Specialty Mfg. Co. is entitled "The Hidden Cost of Materials Handling Can Be the Difference Between Profit and Loss". This colorful, 24-page catalog contains descriptions of Fibre Specialty's line of fibre equipment including trucks, tote boxes, trays, baskets, cans and barrels. Each item is illustrated.

Write in 270 on Reader Service Card

Wire Rope Handbook:

A Leschen & Sons Rope Co. offers a 64-page "Wire Rope Handbook" to help users become more expert wire rope buyers. The contents include descriptions, diagrams and illustrations of wire rope types and constructions, as well as helpful information about lubricants, working loads, safety factors and specifications. Charts give breaking strengths and weights of wire rope by constructions and sizes, along with calculations for the proper selection of wire rope attachments.

Write in 271 on Reader Service Card

Shovel and Truck Crane:

A catalog from Gar Wood Industries, Inc., describes the Model 75A and 75B shovels and the 75BT truck crane. The catalog describes in detail the construction and operational features, such as: fluid coupling, right angle gear drive, power-actuated hoist clutches, conical rollers and power

steering. The shovels have a $\frac{3}{4}$ yard capacity in a standard and heavy duty class, and the truck crane is rated at 20 tons.

Write in 272 on Reader Service Card

New Conveyor Catalog:

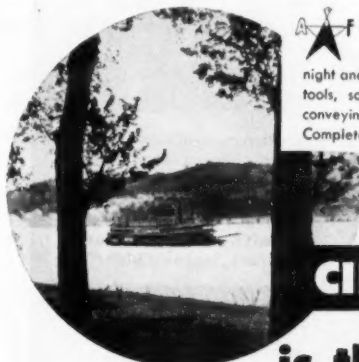
Prab Conveyors, Inc., are announcing the availability of a catalog describing their specialized conveying equipment. Included are drawings, engineering data and photographs of

applications of Prab's new steel belt conveyor.

Write in 273 on Reader Service Card

Too Hot And Heavy To Handle:

A four-page folder offered by the Forker Corporation shows many applications of its Ohio Tramrail Systems in foundry operations. Crucibles of hot metal are moved from furnace to molds via the overhead system.



Along the Ohio River's "Sycamore Shores" reigns quiet peacefulness. But just a mile or so away, industrial Cincinnati is working night and day to produce its world-famous machine tools, soap, pianos, radios, television sets and conveying systems — Alvey-Ferguson Engineered Completely Co-ordinated Conveying Systems.

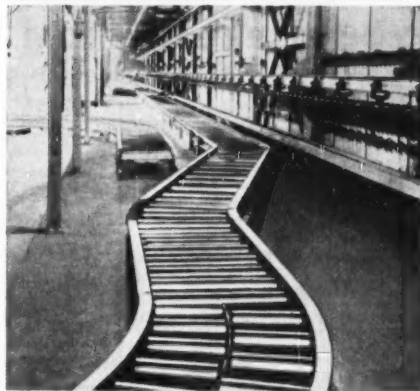
CINCINNATI

is the home of
ALVEY-FERGUSON

where the world's best engineered
completely co-ordinated
CONVEYING SYSTEMS are made!



THE ORIGINAL
AND FIRST
IN THE FIELD OF
PACKAGE HANDLING
SINCE 1901



For a discussion of latest scientific handling methods write

THE ALVEY-FERGUSON COMPANY

434 Disney St.

REPRESENTATIVES IN PRINCIPAL CITIES

Cincinnati 9, Ohio

Circle No. 58 on Reader Service Card for more information

Circle No. 41 on Reader Service Card for more information

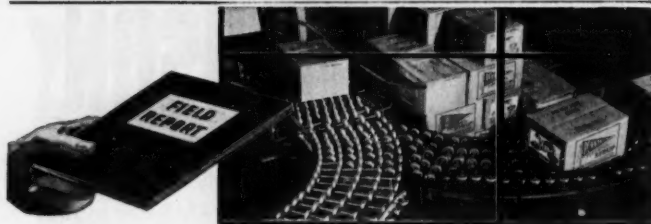
THE RACK Tubular HEAVY DUTY STOCK CARRIERS

1. Seamless Tubing Corner Posts.
2. Corrugated Ends and Base.
3. Expanded Metal Sides.
4. Drop Sides—Heavy-Duty Hinges.
5. 6" Roller Bearing Steel Casters: 2 Swivel—2 Rigid
6. Built in any size or capacity.

Congestion eliminated in many areas. Complete visibility of contents. Moves as trackless train or as single units. Stacks with standard fork truck, up to six high.

RACK ENGINEERING COMPANY
CONNELLSVILLE, PENNSYLVANIA
AGENTS IN PRINCIPAL CITIES

126



YOU'LL PROFIT FROM THE BEST of this cost-cutting experience

Experience is a Great Teacher

That's why Rapistan now releases a library of fast-reading data on how firms in nearly every business have turned materials handling problems into profits. In Field Report form, these case histories include photos and details of each problem and its solution.

Write today for the Field Reports you want. They're full of ideas, including ways to use your present equipment more profitably.

No charge, no obligation. Check coupon and mail.

Rapistan®

BETTER CONVEYING EQUIPMENT
THE RAPIDS-STANDARD CO., Inc.
47 Rapistan Bldg., Grand Rapids 2, Mich.

Circle No. 156 on Reader Service Card for more information

Please check your business classification:
☐ Manufacturing ☐ Agricultural ☐ Wholesale ☐ Retail

Check reports below which will be of greatest benefit to you:

- | | |
|---|--|
| <input type="checkbox"/> Aircraft Parts | <input type="checkbox"/> Heating Equipment |
| <input type="checkbox"/> Auto Supplies | <input type="checkbox"/> Household Appliances |
| <input type="checkbox"/> Beverages | <input type="checkbox"/> Laundry Services |
| <input type="checkbox"/> Building Supplies | <input type="checkbox"/> Leather Products |
| <input type="checkbox"/> Canneries | <input type="checkbox"/> Machine Parts |
| <input type="checkbox"/> Chemicals | <input type="checkbox"/> Magazines, Newspapers |
| <input type="checkbox"/> Cosmetics | <input type="checkbox"/> Meat Packing |
| <input type="checkbox"/> Dairy Products | <input type="checkbox"/> Metal Stamping |
| <input type="checkbox"/> Fabricated Metals | <input type="checkbox"/> Paint Products |
| <input type="checkbox"/> Floor Coverings | <input type="checkbox"/> Paper and Publishing |
| <input type="checkbox"/> Food Products | <input type="checkbox"/> Pharmaceuticals |
| <input type="checkbox"/> Freight Terminals | <input type="checkbox"/> Power Tools |
| <input type="checkbox"/> Fruits, Vegetables | <input type="checkbox"/> Sugar Refining |
| <input type="checkbox"/> Furniture | <input type="checkbox"/> Tobacco Products |
| <input type="checkbox"/> Grain and Feeds | <input type="checkbox"/> Warehousing |
| <input type="checkbox"/> Grain Milling | <input type="checkbox"/> Waste Materials |
| <input type="checkbox"/> Grocery Store | <input type="checkbox"/> Wood Products |

There are many other Rapistan Field Reports. If your business is not listed, please tell us about it.

The manufacturer points out that the same versatility in this application can be duplicated in many other operations.

Write in 274 on Reader Service Card

Is Your Problem A Liquid?

Processing of liquids often call for transportation from one stage to another. The J. N. Fauver Co., Inc., has released a 24-page catalog giving complete specifications on their industrial hose assemblies, couplings, stems.

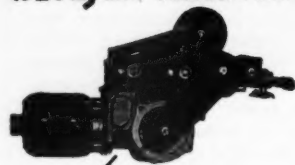
Write in 275 on Reader Service Card

It's Done With Boxes:

"Corrugations," a 12-page booklet published by Stone Container Corp. describes the role of corrugated paper-board boxes in modern merchandising. Free copies are available upon request.

Write in 276 on Reader Service Card

Simply Add a Trojan TRACTOR



FOR POWER TRAVEL

The Trojan Tractor quickly converts slow hand traveled hoists, small cranes, other material handling units to fast, power travel; speeds up production. Simple draw-bar attachment.



Ask for Trojan
Tractor Bulletin 810

DETROIT HOIST & MACHINE CO.
6283 Marrow St., Detroit 21, Mich.

Circle No. 137 on Reader Service Card
FLOW • MARCH, 1953

Dumbwaiters:

"Dumbwaiters—Hand Powered and Electric" is the title of a two-color, file-sized brochure available from D. A. Matot, Inc. The brochure answers all questions as to dumb-waiter types and uses, from simple record carriers and undercounter automatic-brake units to elevators.

Circle No. 232 on Reader Service Card

A Pup to Pull a Truck?

Na, you wouldn't expect a dog to pull a truck, even if you had a whip. That's the theme upon which Clark Equipment Co. introduces its current issue of "Material Handling News". "Lady, Lend Us Your Dog" is the provocative title of an anecdote which ends up by presenting case histories of Clark fork trucks in use.

Circle No. 233 on Reader Service Card

UNIT COUNTS . . .

(Continued from page 69)

A survey of gas companies whose members participated in the formalization of the program has revealed that, since it has become effective, all the advantages anticipated have been obtained. One firm reports a 90 percent reduction in inventory time. Some companies have entered into a program to package other materials, rearranged their storerooms, and acquired mechanical handling equipment to effect greater savings in the handling of packaged material.

Credit should be given to The Pipe Nipple Manufacturers, who, with the assistance of the Purchasing and Stores Committee, developed the packaging of pipe nipples in cartons that are very easily handled either manually or by mechanical equipment.

The Purchasing and Stores Committee is grateful for the assistance given by The Commodity Standards Division, U. S. Department of Commerce, which resulted in the "Simplified Practice Recommendation 248-52—Packaging of Standard Malleable Iron Screwed Pipe Fittings, Black or Galvanized (for 2 inch pipe size and under)." (Copies of this recommendation may be obtained from Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.).

The Commodity Standards Division is now assisting the Purchasing and Stores Committee to develop a standard for the packaging of Gas Stop Cocks, and when that's done, there will be other similar projects. Any industry that can get its members together on quantity and packaging standards will save handling costs. It takes a little "doing", but it certainly is worth the effort.

* Mr. Michelsen is Chairman of the Standard Packaging Sub-Committee

of the Purchasing and Stores Committee, American Gas Association.

STATIONARY LIFTS . . .

(Continued from page 67)

able for transfer bridges across railroad tracks between two unloading docks; lifting turntables which not only raise a load from one floor level to another, but turn 180° while being raised, making unloading and han-

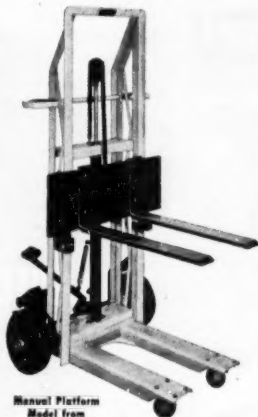
A COMMON PROBLEM:

*How Best to Handle
"In-Between Loads"?*

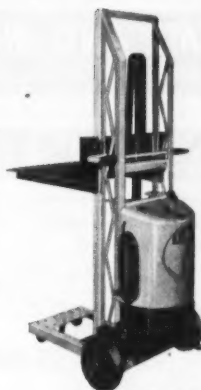
Every business has them: Loads too heavy for safe hand lifting, yet not large enough to justify the use of big, expensive equipment. Loads that vary in size and shape, that move on no fixed route, and that must be handled at many height levels.

A Happy Solution

Use* **BIG JOE** Hydraulic Lifts



Manual Platform
Model from
\$236.50



Battery Operated
Fork Model from
\$587.50

Their platforms or forks are always at loading level.

Lifting is done by a powerful hydraulic unit.

They move or turn easily on large wheels and casters.

They stand rigid with brakes locked.

They are engineered for years of service.



Manually Operated Units—Capacity 750 lbs.,
Lifting Heights to 58"



Battery Operated Units—Capacity 1000 lbs.,
Lifting Heights to 80"

Write for Specifications on All Models

BIG JOE MANUFACTURING COMPANY
900-08 W. JACKSON BLVD., CHICAGO 7, ILLINOIS
Distributors in Principal Cities



* U. S. REG. IN
U. S. PAT. OFF.

Circle No. 82 on Reader Service Card for more information

Circle No. 63 on Reader Service Card for more information

One
man
and



a C-F Lifter...

One man and a C-F Lifter handle the sheet steel stock in and out of storage in this plant with ease, speed and economy. C-F Lifters can pick up, carry and unload more loads per hour using less man and crane time than any other method. Note how closely a C-F Lifter piles sheets—this results in great savings in storage space. Jaw adjustments for carrying different widths of sheets are made in a few seconds by the operator—an important feature when varying sizes of stock are used.

C-F Lifters are made in sizes to handle from 2 to 60 tons in standard and semi-special designs.

Write for the bulletin "C-F Lifters." It illustrates the many cost saving advantages of these lifters.

CULLEN-FRIESTEDT CO.
1320 S. Kilbourn Ave., Chicago 23, Ill.



Circle No. 37 on Reader Service Card

NOLAN ONE-MAN CAR DOOR OPENER



Opens Doors in 20 seconds or less!



The Nolan Car Door Opener gives one man a tremendous amount of pulling energy to get the most stubborn, hard-rolling door wide open in a hurry!

No gangs needed. No marveled limbs or loss of life. A few quick pulls on anchor chain gets any door open in a jiffy. The NOLAN saves the low initial cost in first hour of operation.

New safety and efficiency features now make the Nolan 1-Man Car Door Opener a more necessary labor-saving money-saving help than ever before.

Many thousands in constant daily use!

Free Literature. Order one or more NOLAN Model-H Car Door Openers now. Catalog on request.

The NOLAN Co.,
118-C Pennsylvania St.
Bowerston, Ohio

\$29⁵⁰

F.O.B. Howerston

TIME AND MONEY SAVER!

SPEEDWAYS new, low cost, portable power belt conveyor

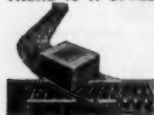
SPEEDLIFT Jr.

Designed for loading and unloading trucks, railroad cars, etc.

This versatile power conveyor is also ideal for warehouse stacking, as booster in gravity conveyor line, as a horizontal assembly line unit and many, many other everyday jobs.



THERE IS A SPEEDWAYS CONVEYOR TO SUIT YOUR NEEDS



SPEEDWAYS GRAVITY WHEEL CONVEYORS.
Light, sturdy, portable. Handle up to 600 lbs. distributed load.



SPEEDWAYS GRAVITY ROLLER CONVEYORS.
Best for hard-to-handle items like kegs, baskets, milk cans, etc.



SPEEDLIFT AND SPEED-BELT POWER CONVEYORS.
Best for heavy-duty boosting and loading and for assembly lines.

Your nearest SPEEDWAYS distributor will gladly show you how SPEEDWAYS low cost equipment can speed your production and save money. Call him or write us.

SPEEDWAYS
CONVEYORS, INC.

1246 NIAGARA STREET
BUFFALO 13, N. Y.

Also Mid. in Canada,
Union of So. Africa

Circle No. 83 on Reader Service Card for more information
136



a
shot in
the arm...

... for
your
production
line

These large capacity storage tanks keep your production from going hungry... assure ample stocks of raw materials for steady output. With MARIETTA concrete stove silos, you can easily increase reserves from days to weeks, cut handling costs and fully protect stored materials from fire, air, and moisture. Tanks are available in many sizes, many arrangements and can be equipped for materials handling equipment.

Write for full information.

The MARIETTA Concrete Corporation
Marietta, Ohio • Branch Offices:

509 Fifth Ave., New York 17, N. Y.
Pulaski Hwy. at Race Rd., Baltimore 21, Md.
805 Bessemer Bldg., Pittsburgh 22, Pa.

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FLOW • MARCH, 1953

STATIONARY LIFTS

Continued

dling easier at the second level; floor to floor transfer, where space limitations make ramps unadvisable; and a host of others.

In an unusual application, a hydraulically-operated lift was used to position welders and welding machinery at exact heights required for position welding of kiln sections. All necessary apparatus was mounted on a special platform measuring 8' x 12' which was mounted on a hydraulic power cylinder capable of handling a 15,000 lb. load.

Push button controls were used to raise the platform to the correct working height, where the welding machine was moved out onto the kiln section. Cross-braced angle uprights were built at the four corners of the platform for stability.

Marked reductions in costs were effected recently at the B & O Mount Clare shop car yard in Baltimore. A four-post lift with a platform eight ft. long by six ft. wide was installed for use in transferring skid loads of repair parts onto service cars. Skids containing parts are transported on platform trucks to the lift, and raised to a dock which is level with the floor of the service car. Once raised, the skid load of parts can be unloaded with ease. Using a one horse-power motor, the lift has a capacity of 6000 lbs.

If you find yourself with a tough lifting problem, one requiring high volume lifting of heavy loads, you might find that stationary lifts are just the devices to fit into your material handling system. They are flexible in that there is almost no place where they cannot be set up. Initial cost is comparatively low, and maintenance is almost always only a minor problem. They can be supplied for indoor or outdoor use in an ever-increasing variety of applications. Even the makers of stationary lifts are surprised at times at the unusual ways in which their products are being put to use.

Thanks to the following companies for their help in preparing the above survey:

Barrett Cravens Co., Globe Hoist Co., Hamilton Tool Co., Lewis-Shepard Inc., Revolver Co., Rotary Lift Co., Service Caster Co.

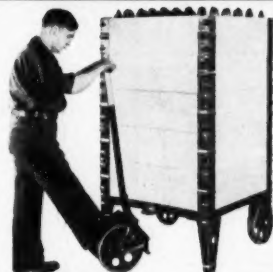
Death Ends Long Career for Jesse Agnew Davis

Pioneers and newcomers alike throughout the materials handling industry were grieved over the recent death of Jesse Agnew Davis, vice president and general sales manager of the Hopkinsville Pallet Co., Inc. His death on January 23 at the age of 60 marked the culmination of a 35-year career in the industry.

From 1926 to 1930 he traveled extensively as a sales engineer for the Kentucky Box Co. For the next 10 years until 1941 he served in the same capacity for A. Backus Jr. & Son, of Detroit.

Later Mr. Davis was named sales manager for G. B. Lewis Co. and during World War II was OPS price administrator in the box division. Following the war he returned to Detroit where he organized the Hopkinsville Pallet Co. At the time of his death he also was sales manager for the Pallet Roller Co.

THE TURNER SYSTEM OF MATERIALS HANDLING



"Deliver the Bin and Save the Handling"
Bin Sections, Pallets, Die Racks, Shop Box Racks and other units fit on the Turner Transport—always ready to roll.



Loaded Turner Die Racks mounted on movable Transports.



Rugged 8-way Stacking Pallets.

Three deck types available.

Save Time by Moving Die Racks Instantly!

Dies on these Racks are fully protected, always accessible, quickly moved to the job.

Send for this FREE BOOK

says:

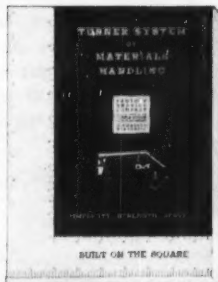
STOP

Waiting for Lift Trucks!

Big Savings Are Made in Little Things

Don't misunderstand . . . lift trucks have their place, an important one . . . BUT one trip through your plant can show you dozens of examples of TIME WASTED, waiting for lift trucks on short hauls. And this goes on EVERY DAY!

The TURNER SYSTEM puts everything on wheels—ready to be moved immediately by hand jimmie—and this system ALSO works with lift truck, crane or tractor. It's the most versatile system available anywhere, and it's used by many of America's leading firms. Get complete information by writing for the new Turner System Book.



Write TODAY for catalog and complete information on the TURNER SYSTEM.

FACTORY SERVICE COMPANY
4607 N. TWENTY-FIRST STREET MILWAUKEE 9, WISCONSIN

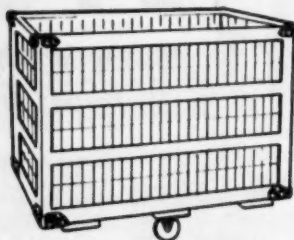
Circle No. 88 on Reader Service Card for more information

CORRECTION . . .

In a list of officers and directors of the Material Handling Institute which FLOW published in its February issue, the name of J. W. Wunsch, president of Silent Hoist and Crane Co. was inadvertently omitted. Mr. Wunsch is noted for his outstanding activities in the Institute and for his contributions to the field of material handling. Our apologies for this error.



J. W. Wunsch



LEWIS BOX TRUCK: Smooth operating swivel or rigid casters make quick ease of movement. Variety of styles offer variety of uses:

"Profit Getters" — these Lewis Containers are tough customers ready to tackle any materials handling problem. Lifetime strength of selected northern elm slats laced with steel wire. Smooth, rounded corners assure snag-proof edges. Heavy gauge three-way steel corner irons lock rugged dovetail joints. Ready for delivery! Special requirements engineered to specifications.

Representatives from coast to coast.

LEWIS
INDUSTRIAL CONTAINERS

6031 MONTGOMERY ST. • WATERTOWN, WISCONSIN



SKID BOX

Specialty designed for use with modern stacking and handling equipment.



STACKING BOX

Panels of strong, durable webbing with outside framework.



BOX TRUCK

Efficiently handles light, bulky material. Highly maneuverable.



MASONITE BOX TRUCK

Smooth, light interior. Masonite Presswood panels.



FOLDING BOX
Folds into one-fourth normal space.

ASSOCIATIONS

(Continued from page 14)

• The recently named Standardization Committee of the Caster & Floor Truck Manufacturers' Association is pictured here following a recent meeting of the



group. Front row, left to right: W. J. Daugherty, Firestone Industrial Products Co.; H. W. Overman, American Pulley Co.; J. S. Hanson, Fairbanks Co.; C. H. Strauss, Ironbound Box and Lumber Co.; James J. Taylor, Towsley Trucks, Inc. Second row, left to right: E. Hays Jakes, Jakes Foundry Co.; E. L. Lee, Saginaw Products Co.; Albert Ford, Geneva Metal Wheel Co.; G. J. Hanhauser, Fab-Weld Corp.; W. H. Noelting, Faultless Caster Corp.; L. C. Connor, Orangeville Mfg. Co. At the far rear of group is K. F. Heath, Nutting Truck & Caster Co.

• The Purchasing Stores Conference, sponsored by the American Gas Association is scheduled for the Hotel Schroeder in Milwaukee, Wis., April 13-15. Topic for discussion will be handling problems in the gas industry.

• A management-labor panel discussion of "Introducing a Materials Handling Cost Reduction Program" was conducted recently at a dinner-meeting of the Chicago Chapter of the American Materials Handling Society.

John Poyser, of the A. T. Kearney & Co., representing management, and Tony Audia, of the United Auto Workers, representing labor, led the discussion.

MEN . . .

(Continued from page 32)

. . . at Hayes Adhesives Co.

Following the recent merger in which Hayes Adhesives became an affiliate of Paisley Products, Inc., the company's former owner, Vernon Hayes, has been assigned the task of directing the sales force of both companies in the southern and southwestern territories. In addition to his sales manager duties he will continue to manage the St. Louis plants for the new owners.



V. Hayes

. . . at Standard Pressed Steel

George A. Gade, manager of outside sales for Standard Pressed Steel Co., has been made vice president of sales. He succeeds J. Whiting Friel, who was made vice president of the firm about a year ago.

. . . at St. Paul Hydraulic Hoist Co.

The appointment of Leo M. Brown as sales manager was announced recently by Frank J. Hasselman, division manager. He succeeds William F. Keeton who has resigned to enter business for himself. Before his new appointment Brown served as assistant sales manager and prior to that was a distributor manager in the south central states for St. Paul.



L. M. Brown

. . . at Marion Metal Products Co.

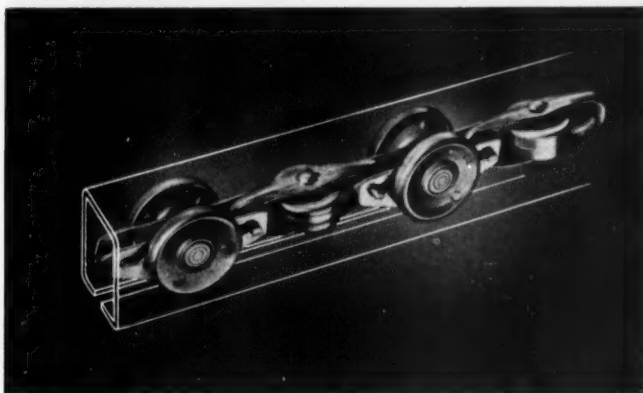
The promotion of Gilbert E. Herr to president and general

manager was one of the organizational changes brought about by the recent death of the former president J. Malcolm Strelitz. Herr has been vice president and general manager since 1941. Other changes in the organization include the election of Joseph L. Halberstein as chairman of the board of directors. Mrs. Strelitz was elected to the board to fill the vacancy created by her husband's death. He had been associ-

ated with the company since 1923 and was its president since 1930.

. . . at Allis Chalmers Mfg. Co.

Arnold I. Thorsen, manager of the company's Norwood Works, has been appointed assistant director of manufacturing of the general machinery division, according to J. D. Greensward, vice president and director of manufacturing. Thorsen has been with the company since 1926 and has



Chain your costs down

Richards-Wilcox "Zig-Zag" Continuous Power Conveyor is a specially constructed, motor-driven chain that travels through a steel, tube-like track. The unit is continuous; travels up and down, in and around, anywhere in the plant; carrying loads up to 125 pounds at all speeds from 1 inch to 60 feet per minute. Installation is easy and inexpensive, and may be quickly adapted to conform to plant alterations. Among its major advantages, "Zig-Zag" puts "dead" space to work—releases personnel for other duties—increases efficiency and keeps costs down.

Write for complete information, or contact your nearest Richards-Wilcox engineering office for consultation at no obligation.

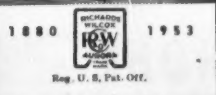


Your best buy for economy and flexibility!

- Horizontal and vertical units alternate in a continuous chain traveling through special steel tubing.
- Complete flexibility for installation in any plant. Easily installed, easily changeable to conform to plant alterations.
- SAFE—all moving parts are fully enclosed.
- Low first costs—low power factor.
- Standard horizontal and vertical curves—two-foot radius.

Richards-Wilcox Mfg. Co.

"A HANGER FOR ANY GOOD THAT FLIES"
AURORA, ILLINOIS, U.S.A. Branches in all principal cities





No penthouse or heavy sidewalls!

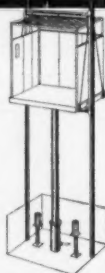
Oilraulic Elevators are designed for low-cost installation and economical, trouble-free operation. No penthouse or heavy load-bearing shaftway structure needed . . . powerful hydraulic jack supports car and load. Rugged car construction to withstand shocks and jolts of power truck loading. Automatic floor leveling

within 1/4" guaranteed, regardless of load size or rate of speed. Car sizes, capacities and controls as required.

Over 65,000 Oilraulic Elevators and Lifts are now in use . . . backed by Rotary's coast-to-coast service organization.

For catalog, write Rotary Lift Co., 1022 Kansas, Memphis 2, Tenn.

Rotary OILDRAULIC ELEVATORS



Speed up Loading with the HOHL ADJUSTABLE RAMPS



• Just rest the lip of a HOHL Adjustable Ramp on the bed of a truck and float your load aboard—quickly, easily. Flexible construction keeps this revolutionary ramp parallel to both the truck and the loading dock, regardless of off-center loading! If trucks suddenly move away from platforms before the ramp is lowered, the automatic safety device lowers ramp into level position.

The labor and time you'll save with HOHL Ramps will soon pay for their installation. These ramps can be mounted on your existing loading docks or installed in new buildings. Wherever and however you use HOHL Ramps, they'll pay you in loading efficiency.

WRITE TODAY for complete details

HOHL MACHINE & CONVEYOR CO.
2457 Main Street Buffalo 14, New York



Circle No. 27 on Reader Service Card for more information

been at Norwood since 1940. He is returning to Milwaukee to assist Greensward in the direction and coordination of manufacturing operations throughout all of the Allis-Chalmers plants.

... at American Pulley Co.

Important personnel changes announced recently include that of **Henry H. Hamilton** from advertising manager to assistant manager of the materials handling division; **Joseph C. Salette Jr.** from St. Louis district manager to sales promotion and advertising manager; **George L. Michel** joins the firm as manager of the St. Louis office; **Samuel S. Stuart** from district manager of the Boston office to the same post in Philadelphia, and **John J. McFarland** becomes district manager of the Minneapolis office. He previously was a sales engineer with the Illinois Lock Co.

MERRILL MATERIALS HANDLING DEVICES



MERRILL BROTHERS
56-35 ARNOLD AVE., MASPETH, N. Y.

Circle No. 78 on Reader Service Card
FLOW • MARCH, 1953

... at Chase Bag Co.

E. S. Elgin has been named sales manager of the Waterproof, Polyethylene and Crinkled Paper Products department of the Specialty division, according to R. N. Connors, company vice president. Elgin had been connected with the Specialty department of the Chase Philadelphia and St. Louis branches before transferring to the general sales department in Chicago early in 1952.

... at Stone Container Corp.

Three new executive appointments have been announced by Norman H. Stone, board chairman and president of the company. George Chazanow has been promoted to vice president of finance; Irving G. Hefter is the new vice president in charge of national accounts, and Joseph J. Fiori becomes vice president in charge of all mill operations.

... at Lamson Corp.

An important management addition has been made in the appointment of J. B. Ellor as Market Research Manager. It will be Ellor's objective to re-appraise markets in fields where Lamson products are utilized. Ellor comes to his new post from W. C. Ritchie & Co., folding box manufacturers, and prior to that was market analyst for Uarco, Inc.



J. B. Ellor

... at S.I.P.M.H.E.

C. J. Carney Jr., managing director of the Society of Industrial Packaging and Materials Handling Engineers and its annual exposition, has been named chairman of the standard practices committee of the National Association of Exhibit Managers. The N.A.E.M. is an organization of 70 exhibit managers from associations and societies who stage

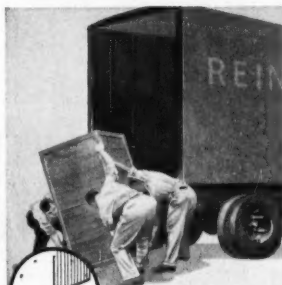
many of the nation's largest and most important industrial, professional and trade expositions.

... at Reliance Electric & Engineering Co.

Andrew C. Perrin has been assigned to the newly created post of west coast district sales manager, according to E. E. Helm, sales vice president. A sales ap-

plication engineer in the Chicago office for the past six years, Perrin now makes his headquarters in San Francisco. Keith E. Carter, sales engineer in Pittsburgh, has been transferred to Chicago to take over Perrin's former duties. Replacing Carter in Pittsburgh will be J. Edward House Jr., who has been attached to the company's applied engineering and sales staff in Cleveland for the past two years.

WHICH WOULD YOU SAY IS THE BETTER WAY— TO LOAD YOUR TRUCKS



Loading and unloading can be cut to a fraction of the usual time—with less manpower—with Anthony LIFT GATES. Wheel the load on . . . raise it with hydraulic power . . . wheel it into the truck. Daily deliveries are practically doubled with less merchandise damage and fewer personnel accidents. One man can easily handle heavy, bulky loads with a LIFT GATE to do the lifting. Load or unload from curb, dock and ground levels. Available in types, and with power closing, to fit your needs.

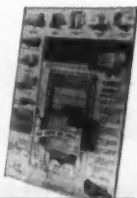
A demonstration will show you why LIFT GATES are used in over 123 industries to make more deliveries per day with less equipment and manpower. There is no obligation.

USE THE LIFT GATE WAY TO MAKE TIME PAY

MODELS FOR ANY
TRUCK 1/2-TON TO
HEAVY SEMI-TRAILERS



Write for distributor's name on your company letterhead. Ask for a demonstration or a "MODEL" that shows how to evaluate your need for a LIFT GATE. Address Dept. 15A



ANTHONY COMPANY
STREATOR • ILLINOIS

Circle No. 126 on Reader Service Card for more information

**THESE SILENT HOIST
WORK HORSES WILL
SAVE UP TO 75%
IN TIME AND LABOR COSTS**



**HEAVY-DUTY FORK
LIFT-TRUK**

5-7½-10-15 TON CAPACITIES

The heavy-duty "Silent Hoist" LIFT-TRUK and LIFT-O-KRANE feature fast handling of unbalanced and capacity loads, with maximum stability . . . high lifting range . . . short turns in narrow aisles create added acres to your storage space.

These SILENT HOIST features add up to faster inloading, most efficient interplant handling and scientific stacking, quicker out-loading to truck, trailer or car, with time and cost savings, very often up to 75%.

LIFT-O-KRANE

Combination Boom Crane and Fork Lift, with separate power winch for Load Line.

SEND FOR BULLETIN 73 on LIFT-O-KRANE and BULLETIN 77 on LIFT-TRUK.



Either machine can be supplied with RAM attachment.



SILENT HOIST & CRANE CO.
Pioneers of Heavy Duty
Materials Handling Equipment

800 63rd STREET, BROOKLYN 20, N. Y.
Circle No. 157 on Reader Service Card

... at Athey Products Corp.

Appointed eastern district representative recently was W. L. Davies. Prior to his association with Athey, Davies was assistant to the director of the National Production Authority in Washington. His territory will include Washington, D. C., Maryland and eastern Pennsylvania.

... at Baldwin-Lima-Hamilton Corp.

W. M. Huston has been announced as the new manager of engineering for Lima Shovels, Cranes and Crushers built by the company's Construction Equipment Division. Succeeding Huston as chief engineer of Shovels and Cranes and administrative head of the shovel and crane engineering department will be E. G. Halby.

Circle No. 1 on Reader Service Card

**NEED A LIFT?
GRAND
HYDRAULIC LIFT
HAND TRUCK**



Lift Stacker
MODEL 735

FOR
LOADING AND
UNLOADING AT
TRAILER TAILGATE
HEIGHT AND FOR
STACKING DRUMS
AND CASES.

Electric drive hydraulic system lifts 750 lbs. up to 55 inches in a few seconds. One man can safely raise and stack heavy loads.

GRAND LIFT STACKER MODEL 735

Pallet or Fork Lift to suit your requirements. Maximum Heights 54" to 94". Uses Standard Auto Battery Built-in Battery Charger. Completely Portable. Low Cost.

Other models include manually operated hydraulic lift hand trucks to suit many lifting, moving, and stacking operations.

WRITE US OR ASK YOUR LOCAL MATERIALS
HANDLING DEALER



MANUFACTURING & SALES CO.

201 N. WELLS ST., CHICAGO 6, ILL.

**HEAVY DUTY
WHEELBARROWS
AVAILABLE FOR**

**PROMPT
SHIPMENT!**

You have been patiently waiting for Sterling Heavy Duty Wheelbarrows. Now, with a greatly improved material situation, we are in position to make prompt shipment on short notice. Sterling barrows are engineered for hard, everyday service. Phone, wire or mail your order — today.



Model D45

Engineered to take hard punishment in industrial plants, railroads, foundries, etc.



Model DF4-5

Equipped with steel plate reinforcement for wheeling extra heavy loads in foundries, etc.

All Models equipped with either steel wheels or wheels having zero pressure tires or pneumatic tires.

STERLING WHEELBARROW CO., Milwaukee 14, Wis.



Look for this Mark of
STERLING Quality

**Sterling
WHEELBARROWS**

Circle No. 49 on Reader Service Card for more information

A 5621-15R

FLOW • MARCH, 1953

... at U. S. Electrical Motors, Inc.
Frank M. Mason, vice president and general manager of the company's plant at Milford, Conn., died last Dec. 27 of a heart attack. He was only 42 years old. He had been associated with U. S. Motors since 1933.

... at Dravo Corp.

Robert Dickey has been named assistant to the sales manager in the Engineering Works Division, it was announced recently. Dickey returned to the company in December after serving 18 months as a Lt. Commander in the Navy. Prior to that he had been a sales engineer for Dravo since 1948.

... at Colorado Fuel & Iron Corp.

Sam W. Densmore's appointment as warehouse manager for the Wickwire Spencer Steel Division was announced recently by **H. C. Allington**, general manager of sales. Densmore joined Wickwire in 1928. His new position has been created to standardize warehouse procedures and operations within the Wickwire division.

... at Drake, Startzman, Sheahan & Barclay

This firm of distribution and materials handling consultants has announced the appointment of **Donald R. Neil** as a principal of the company.

... at Aluminum Co. of America

Sanford H. Bennett, works manager of the Buffalo plant, has been named Chief Industrial Engineer, Casting Division. His office will be in Pittsburgh. Succeeding him as the manager of the Buffalo works will be **H. E. Cook**, who has been superintendent there since 1942.

Norbert C. Hilbrecht, chief industrial engineer at Buffalo, will

take over Cook's former post. **Sherwood Willard** completes the chain of promotions by assuming Hilbrecht's former job. He has been with Alcoa since 1942.

... at National Production Authority

The promotion of **John C. Clay** as deputy assistant administrator

of the N.P.A. has been announced recently. In his new duties Clay will be responsible for mobilization planning, priority grants, certificates of amortization and other activities pertaining to container and packaging, chemical, pulp and paper, lumber and wood products, printing and publishing, and rubber products divisions. He is currently on leave as assistant to the executive vice president of National Starch Products, Inc.

BIG LIFT.....

Little cost.....

with the RUGER Crane



WEIGHING MATERIAL

Through its simple, effective combination of hydraulic power and cantilever boom the Ruger provides advantages both of floor truck and overhead cranes. Besides it does: work neither truck nor overhead crane can do—reaches out, over, under—picks up, lifts, lowers, travels with load on large roller-bearing wheels wherever you can push a hand truck.

Short, easy, back-and-forth strokes of the pump lever lift load from floor up to 9 ft. high (even higher with extension boom attachment). Load positively supported by hydraulic pressure at any height of lift. Fine-threaded release valve controls the lowering, fast or slow as you desire. Simple... safe... anyone can operate a Ruger.

Ruger Hydraulic Floor Cranes are built in 1/2-ton, 1-ton, 2-ton and 3-ton sizes. The complete story is told in our newest catalog. Please write Ruger Equipment, Inc., West Fourth Street, Uhrichsville, Ohio.

Ruger also manufactures hydraulic cranes for truck mountings in 1/2, 1 and 2 ton capacities.

MAIL THIS TODAY

SUGGESTED APPLICATIONS

Handling heavy castings and forgings.
 Die removal and installation.
 Quenching and plating operations.
 Transporting heavy parts to storage or assembly.
 Moving finished machines to shipping.
 Moving or re-locating plant machinery and equipment.
 Loading and unloading trucks, etc.
 Lifting, stacking and tiering heavy boxes, crates, drums and barrels.
 Engine removal and installation.
 Spring repair and replacement.
 Removing and installing differentials and transmissions.

Ruger Equipment, Inc.
 601 W. Fourth Street
 Uhrichsville, Ohio

Please send complete information and illustrated catalog about

Floor Cranes		Truck Cranes	
(Check one or both)			
I am interested particularly in size or sizes checked.			
1/2-Ton	1-Ton	2-Ton	3-Ton
Name _____			
Company _____			
Street _____			
City and State _____			

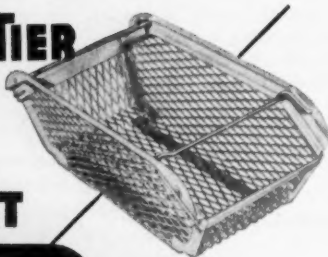
RUGER Equipment Inc.,

WEST FOURTH ST. • UHRICHSVILLE, OHIO

ORIGINATORS AND PIONEERS IN THE DEVELOPMENT
 OF HYDRAULIC FLOOR AND TRUCK CRANES

Circle No. 59 on Reader Service Card for more information

The NESTIER Expanded Metal BASKET



**DOES
EVERY**

**SMALL
PARTS**

*from stockroom
through machining
and dipping to
assembly and inspection*

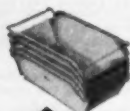
**HANDLING
JOB!**

WITHOUT EVER CHANGING

THE CONTAINER!

THERE'S NO RE-HANDLING OF SMALL PARTS
when you use the NesTier Metal Basket!

In this scientifically designed NesTier unit, parts can be taken from the first machining operation, and moved swiftly through all phases of production. By eliminating the need for changing containers when dipping or degreasing, NesTier Baskets effect tremendous savings of time and labor—actually pay for themselves many times over.



**IT NESTS
IT TIERS**



Constructed with all basic NesTier features, the Basket serves perfectly as an all-purpose tote-box, usable from stockroom to loading dock. It can be transported by overhead and roller conveyors, on pallets and skids, or can be carried easily by hand. Requires minimum storage space, presents a neat, orderly appearance wherever tiered or nested.

In every way, the NesTier Basket streamlines small parts handling, cuts production costs.

The Basket is interchangeable with the standard sheet steel NesTier. Two standard sizes. Heavy-gauge steel, zinc plated.

**MATERIALS HANDLING ENGINEERS—WRITE
FOR FREE DESCRIPTIVE BULLETIN TODAY!**

NESTIER

THE CRAS-WM DOLPKE MANUFACTURING CO., INC.
Metal Specialties Division
ROSSMYNE, OHIO

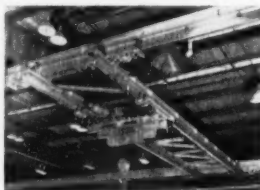
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NEW EQUIPMENT . . .

(Continued from page 42)

Long-Span Crane

This monorail type crane with 10-ton hoist-carrier mounted between the two bridges offers extra hook clearance for use of storage area. Another advantage is its possible long-span application. The stiffening effect of the two special bridge beams together with the diagonal bracing, permit cranes to be built for maximum coverage. Special features include the use of self-aligning crane truck trolley for articulated crane travel. All movement is power operated, including interlock for transfer of carrier on double spur tracks over recessed receiving dock. Control is centered in push-button station suspended from carrier. Manufacturer is American MonoRail Company.



Circle No. 192 on Reader Service Card

ALLEN
Hydraulic
SHOVELS
for fork trucks



...SETTING SAVINGS-RECORDS

**in plants
like these**

**FOUNDRIES . . .
AUTOMOTIVE . . .
PAPER MILLS . . .
BRICK . . . CONCRETE PRODUCTS
. . . GLASS . . .
MANY OTHERS**



With the ALLEN Shovel attachment, a fork truck becomes a multi-purpose machine . . . handles bulk items in addition to regular duties . . . keeps busy all the time. Capacities to meet your needs . . . 8 to 81 cu. ft.

YOU'LL BE IMPRESSED BY ACTUAL USER-EXPERIENCE . . . SEND FOR ON-THE-JOB PERFORMANCE DATA TODAY.



ALLEN INDUSTRIAL PRODUCTS, INC.
1200 LIBERTY STREET, BATTLE CREEK, MICH., U.S.A.

Circle No. 10 on Reader Service Card for more information
FLOW • MARCH, 1953

Steel Framing System

A system of all-bolted steel framing for construction and maintenance work is manufactured by Flexa Steel Products, Inc. According to the manufacturer, the line includes a wide range of concrete inserts, pipe rollers and hangers, clamps and other fittings suitable for diversified applications.

Circle No. 205 on Reader Service Card

Stand-Up Fork Truck

An electric stand-up fork truck, the Stoway, which can operate within its own length, is manufactured by Clark Equipment Company. The Stoway is designed for warehousing and freight terminals where close quarters and narrow aisles demand high maneuverability and where the driver must continually mount and dismount. It has a capacity of 2000 pounds at 24

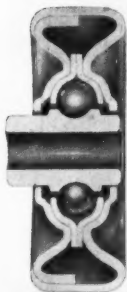


inches. The Stoway is designed for warehousing and freight terminals where close quarters and narrow aisles demand high maneuverability and where the driver must continually mount and dismount. It has a capacity of 2000 pounds at 24

METZGAR GRAVITY CONVEYORS

**Life-time
Construction**

**Means
More for Your
MONEY**



Standard
Sections
Wheel-Roller
Widths
11 1/2", 15", 18"
Lengths
8', 10'
Curves
45° - 90°

16 YEAR'S Continuous Service

at no maintenance cost because Metzgar carries the load on these sturdy bearings — 1/4" steel balls (Hoover or equal) spinning in hardened labyrinth ball races.

Standard in all Metzgar wheel and roller gravity conveyors.

Write for descriptive folder.

METZGAR CO.

MFGS. OF WHEEL & ROLLER GRAVITY &
LIVE ROLLER CONVEYORS • POWER BELT
CONVEYORS • SWITCHES • ACCESSORIES
& WHEEL DOLLIES



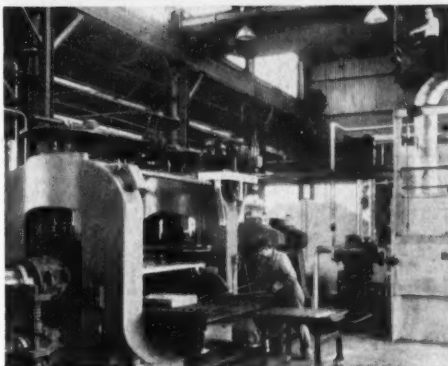
423 Douglas N.W.

GRAND RAPIDS 4, MICH.

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Magnesium Plate **HOT ROLLED**

**NOW AVAILABLE FROM
THE B & P ROLLING MILL**



Prompt Delivery On 3/16" and Thicker

MAGNESIUM is the lightest weight commercial metal. MAGNESIUM PLATE is one third lighter than aluminum plate. It is strong. It is easily welded by the use of standard commercial practices.

Prices Are Competitive On a Square Foot Basis With Aluminum.

Phone (TASHMOO 5-5900), Wire, or Write:

**BROOKS and
PERKINS, Inc.**

Pioneer Magnesium Fabricators; Plate
and Sheet Rolled from Magnesium Ingot

1944 W. FORT ST., DETROIT 16, MICHIGAN

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145

TRY THIS *Hapman*



TUBULAR CONVEYOR QUIZ:

Let's assume you're a Conveyor-Project Engineer employed by Hapman—

QUESTION 1—Which materials in panel would you advise can be efficiently handled by Hapman Tubular Sealed-pin Chain Conveyors?

QUESTION 2—To elevate a granulated chemical 29 ft. above floor, at 2,000 lbs. per hour, what motor would you specify?

1 H.P. _____ 2 H.P. _____
3 H.P. _____ 5 H.P. _____





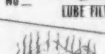
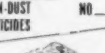
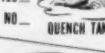
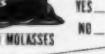

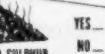
QUESTION 3—A prospect asks, "What is the outstanding advantage of a Hapman Tubular Conveyor?" What's your reply?

ANSWERS: 1—All now successfully handled except sticky molasses. 2—One horsepower. 3—Hard to answer. In one case, ability to convey wet material is vital; in another the Hapman's air-tight seal keeps moisture or dust out—or fumes in. Ability to curve around obstacles may be essential. Your best answer: "They cut costs!"

NOW SEND YOUR QUESTIONS!

Write for details and Bulletin F-353



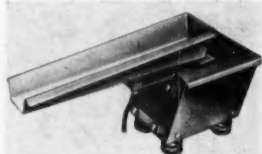
YES _____	NO _____		CAST IRON CHIPS
YES _____	NO _____		POWDERED CLAY
YES _____	NO _____		WET "SPENT" GRAIN
YES _____	NO _____		LIME FILTER CAKE
YES _____	NO _____		POISON DUST INSECTICIDES
YES _____	NO _____		QUENCH TANK SLUDGE
YES _____	NO _____		PROCESSED MOLASSES
YES _____	NO _____		CARBORUNDUM DUST
YES _____	NO _____		GRANULATED SULPHUR
YES _____	NO _____		SHIP-BOILER COAL

inches, 2500 pounds at 15 inches and 1650 pounds at 30 inches. Acceleration and direction of travel are controlled through forward or backward movement of a single lever. The 60-inch turning radius and 360° steering allow the truck to operate within its own length.

Circle No. 195 on Reader Service Card

Vibratory Feeder

The Syntron Company makes this small vibratory feeder which has a feeding capacity of up to 500 pounds per hour of bulk material to various types of industrial processing equipment. It utilizes the electromagnetic vibrating principle which eliminates gears, bearings, belts, idlers, etc. A compact unit, it measures 7¼ inches high by approximately 14 inches long, and weighs 14 pounds. Control of rate of material flow from the feeder is by a rheostat in the separate controller, and can be regulated from a trickle to a gushing flow.



Circle No. 196 on Reader Service Card

DETECTO SCALES

There's a precision-accurate Detecto Scale for your specific weighing and counting need. The Detecto helps increase production, yet assures you maximum accuracy by making slightest weight discrepancies immediately visible.

DETECTO "POST-O-METER"

This automatic computing scale is the ultimate development in parcel-post weighing. Saves time and money by speeding up the weighing operation and eliminating overpostage. Doubles shipping room efficiency.



Write for literature

DETECTO • SCALES • INC.

MAKERS OF FINE SCALES SINCE 1900

543 W. PARK AVENUE • BROOKLYN 5, NEW YORK
SCALE ENGINEERS IN ALL PRINCIPAL CITIES

Circle No. 26 on Reader Service Card for more information
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Circle No. 84 on Reader Service Card for more information
FLOW • MARCH, 1953

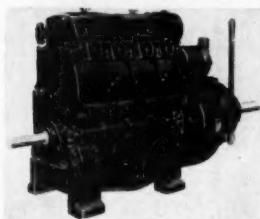
For Servicing Two-Way Radio

A portable multi-range voltmeter and milliammeter, providing in one instrument the means for making all the electrical measurement necessary to install and service two-way radio communications systems, is announced by the Engineering Products Department of the RCA Victor Division, Radio Corporation of America.

Circle No. 220 on Reader Service Card

Gasoline Engine

Distributed by the National Supply Company, this gasoline engine is manufactured by R. A. Lister & Co., Ltd. The engine, made in 1, 2, 3, 4 and 6 cylinders, in a range from 8 to 54 h.p., is



designed for operation at high speeds, and at tropic to Arctic temperatures. Each cylinder develops 9 h.p. at 1800 RPM, except the single cylinder engine, which develops 8

h.p. at 1500 RPM. A standard type of wet liner, chrome-hardened, has been adopted. In this elec-

Circle No. 89 on Reader Service Card for more information

**ONE MAN AND A Lincoln
AUTO-SCRUBBER**
CLEANS MORE FLOOR SPACE THAN AN
ENTIRE CREW OF SCRUBBERS AND MOPPERS!



Above: floor cleaning at well known manufacturer of office appliances with a Lincoln 500 AUTO SCRUBBER that cleans floors better in one-tenth the time at one-fourth the previous cost. Write DEPT. 3-53 for details.

**\$AVE UP TO 75%
ON FLOOR SCRUBBING!**

★ Without cost or any obligation whatever, our local floor maintenance specialist in your territory will survey your present methods and submit specific recommendations to insure substantial savings.

There is a recommended LINCOLN for every floor cleaning operation. Ask for a FREE Demonstration



The LINCOLN FLOOR SCRUBBER AND POLISHER

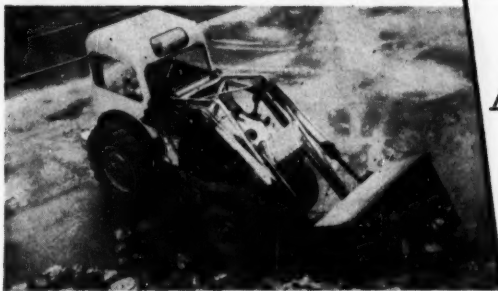


Lincoln-Schluter

FLOOR MACHINERY COMPANY
1212 WEST VAN BUREN ST., CHICAGO 7, ILLINOIS

World's Manufacturer of the Most Complete Line of Floor Maintenance Equipment

Trucks can't pay you when they're standing still



Loading, stockpiling, yard-tending . . . all are faster, at lower cost with big-capacity MM Wheelers.

Rapid-loading MM Wheelers keep trucks rolling, get more work out of your truck fleet. These big-capacity industrial loaders actually give you 3 loads for 2, get trucks in and out faster for the top dollar profit. Large buckets on the 30 h.p. RTI and 51 h.p. UTIL handle 1½ to 2½ tons per trip. Special attachments and extra high lifts are available to meet your requirements. See your MM dealer for the facts on the MM UTIL Shuttle Gear that makes loading 50 per cent faster, gives you 3 loads for 2!

Keep 'em rolling

WITH RAPID-LOADING



WHEELERS



Get trucks in, and get 'em out again. Load up to 2½ tons per trip with easy-handling MM Wheelers.

MINNEAPOLIS-MOLINE • MINNEAPOLIS 1, MINNESOTA

Circle No. 154 on Reader Service Card for more information



*Narrow
aisles.
Greater
heights*

GIVE MORE
STORAGE SPACE
IN
THE SAME AREA



STAK-RAK utilizes 90% of the cube!

NO LONGER is it necessary to waste valuable storage space by providing 10 foot aisles for fork-truck maneuvering.

STAK-RAK requires aisle space only 2 ft. greater than pallet size—revolves 360° to serve both sides.

NO LONGER is stacking height limited by the fork lift.

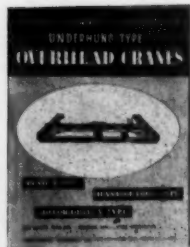
STAK-RAK stores higher than any other method—within inches of the ceiling.

NO LONGER is floor maintenance a problem.

STAK-RAK operates from overhead crane—no operations on the floor—no floor maintenance—no "jockeying" of the load.

STAK-RAK gives fast, easy movement of material in and out of the racks.

1-man push-button control 100% selectivity



Write for Catalog and Engineering Data.

A working model of a complete handling system will be demonstrated at the National Materials Handling Exposition, Philadelphia—Booth 333.

CHICAGO TRAMRAIL CORPORATION

4000 Washington Boulevard
Chicago 24, Illinois
KEdzle 3-7473

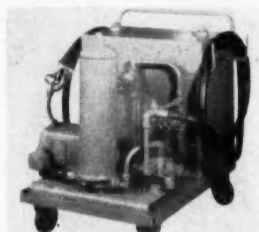
Circle No. 152 on Reader Service Card for more information
148

tro-chemical treatment, the cylinder surfaces are permanently impregnated with chromium, said to result in a perfect bonding of chromium into the pores of the cast iron. It is reported that the chromium cannot peel off or become detached from the wearing surface of the cylinder.

Circle No. 199 on Reader Service Card

Portable Filter Unit

This portable hydraulic filter unit that is used for pumping hydraulic oil from a machine, through the filter and back into the machine or into tanks for transport or storage is built by J. N. Fauver Company, Inc. The equipment consists of: Fauver portable tank, Fauver hose assemblies, Cuno filter, Yale & Towne pump, Parker fittings and tubing, Brown drip-proof nozzle, Crane valves and cock, 1/2 h.p. motor.



Circle No. 200 on Reader Service Card

Save time! Prevent accidents!

LIFT AND DUMP
MECHANICALLY

**BAGS
BARRELS
DRUMS
BOXES**

REDUCE HANDLING COSTS with a Cesco Dumper. It handles up to 100 loads per hour; has a lifting cap. ranging from 100 to 1500 lbs. Both single- and multi-purpose portable models are built in standard dumping heights from 5 to 12 ft. Stationary models up to 16 ft. dumping heights. Push button controlled. Write for catalog.

ESSEX CONVEYOR, INC.

101 Celdon Street • Newark, New Jersey

COLSON EQUIPMENT & SUPPLY CO.

1317 Willow Street • Los Angeles 13, California



Circle No. 76 on Reader Service Card for more information
FLOW • MARCH, 1953

Electric Tote Truck

This electric tote truck operates on electric power supplied by special batteries which carry an 8-hour power supply and which may be recharged overnight. Two-wheel differential drive furnishes power which is said to take a full load over almost any

type ground and up grades. Drum brakes set automatically when halted, release automatically when started. Three-wheel design gives the truck a short turning radius. It has six speeds forward and reverse. Capacity is $\frac{1}{2}$ ton. Manufacturer is Electric Marketeer Manufacturing Company.

Circle No. 201 on Reader Service Card

Battery-Hydraulic Lift

Langley Manufacturing Company has developed a self-contained battery-hydraulic lift capable of lifting 500 and 1000 pounds at 11 feet per minute. Called the Langley Hydra-Powrlift, it is designed for handling crates, boxes, barrels,



Your **BEST** Investment in **RECLAMATION** and **BULK STORAGE** Equipment

Ask the plant engineer or superintendent who uses a Sauerman Drag Scraper to store and reclaim bulk materials. He will tell you that this equipment handles materials easier, faster, cheaper than any method he has used.

These low-cost, labor-saving machines are suited to either open or covered storage. The Sauerman Crescent bottomless scraper, an exclusive feature of these machines, hauls at rate of 400 f.p.m. and dumps automatically when travel is reversed. Made in fourteen sizes. Any size can be operated by one man. Maintenance expense is very small.

Write today for Catalog E, containing photographs, diagrams, and technical data on bulk storage.



SAUERMAN BROS. Inc.

540 S. Clinton St., Chicago 7, Ill.

Circle No. 79 on Reader Service Card for more information
FLOW • MARCH, 1953

HANDLE *More* FOR *Less!* WITH **BELT** PORTABLE CONVEYORS

MOVE BAGS, BOXES, BULK
Quicker, Cheaper!

MODEL R
VERSATEYOR
BAG AND BOX
HANDLER



Overall lengths 13, 15, 17 or 19 ft. Bed is 18 in. wide. Can be operated with or without either or both undercarriages. Belt speed 80 f.p.m. Aluminum-alloy frame. 300 lb. distributed load. 150 lb. unit load.

NEW ACCESSORIES

Gravity skate-wheel feeder and nose-over section, power belt, feeder and nose-over sections, adjustable guard rails, support stands for stationary floor-to-floor applications and gravity conveyor attachments now available.



MODEL S
HANDY-HANDLER
BULK CONVEYOR

Standard 16-ft. length (4-ft. extension section also available). Special lengths on request. Tough, aluminum-alloy frame. 16-ft. unit weighs 97 lb. without power unit. Can be used with or without dolly.

MODEL U HANDY-HANDLER PARTS CONVEYOR

Lengths 6, 8, or 10 ft. Distributed load, 100 lb. 25 lb. maximum unit load. Chain speed 50 f.p.m.



Put thrift in your every material shift with easy-to-use lightweight, aluminum Belt conveyors. Cut corners and costs on scoop-shovel jobs, stacking and storing, loading and unloading. Write today for literature.



THE BELT CORPORATION

7203 Stahl Road, Orient, Ohio

Circle No. 149 on Reader Service Card for more information
149

inexpensive
MECHANICAL MUSCLES

for your Light Duty Lifting

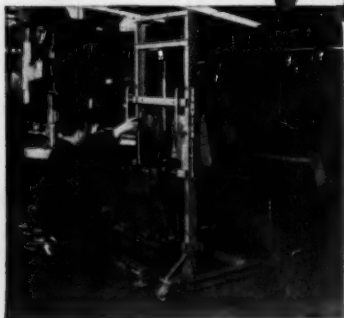
SERVICE Battery Powered JUNIOR LIFTERS

For loads too heavy for a man, too light for expensive, heavy-duty lifting equipment.

Service Battery-Powered JUNIOR LIFTERS easily, quickly and safely handle those light-duty lifting jobs—barrels, crates, cartons, materials—avoiding tie-up of your expensive, heavy lifting equipment. Ideal for receiving, shipping, storage and intra-plant materials handling. Move on easy-rolling Forgeweld Casters and Wheels.

JUNIOR LIFTERS are available in fast-acting, free-to-roam battery-hydraulic models, with a capacity of 500 lbs.—no power lines or cords to drag or restrict maneuverability. Rate of lift 15 feet per min. Standard dimensions*: lift 4'8"; platform size 30" x 30" square; max. width 30"; overall height 6'0". Write today for circular No. 430.

* Other dimensions supplied on special order. Electric-Hydraulic Powered, Hand-Hydraulic and Crank-up, Crank-down Junior Lifters also available.



Battery Powered JUNIOR LIFTER is fast operating . . . can be used anywhere. Note in lower photo how easily one man controls operations.

See SERVICE for "SPECIALS"

Versatile design permits most Service Lifting Equipment to be made up as low-cost semi-specials to suit your specific needs exactly.



SERVICE CASTER & TRUCK CORP.

Executive Offices: Albion, Michigan
Plants at Albion, Michigan & Somerville 43, Mass.

See your Classified Telephone Directory for Nearest Distributor

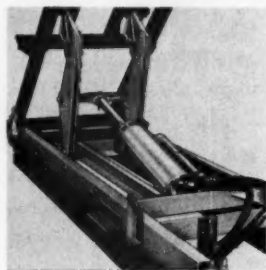
Circle No. 50 on Reader Service Card for more information

drums, pallets and other materials. It is 81 inches high and 32 inches wide. The lowered height of the 24 by 24 inch platform is 5½ inches, and it lifts up to 60 inches.

Circle No. 202 on Reader Service Card

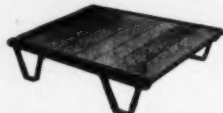
Hydraulic Hoist

Shown here is the Model 770 hydraulic hoist manufactured by The Galion Allsteel Body Company. It is said the hoist, with a load capacity of 10 to 13 tons, is ideal for most medium-duty operations. The unit weighs 950 pounds and features an all-steel subframe, cast steel rear hinges and a forged steel crosshead. Lift arms and cast steel lift links are equipped with bronze bushings and grease fittings. It has a dump angle of 50° with a mounting height of 14 5/8 inches and is recommended for use on 8 to 12 foot dump bodies.



Circle No. 203 on Reader Service Card

In production or in storage IRONBOUND EQUIPMENT HANDLES SMALL PARTS MORE EFFICIENTLY



Standard 2-way entry bolted type skid built to handle loads up to 5 tons.



Standard box top welded to standard skid. Available too, with removable boxes. Handles many items in production and storage.



Flexible arrangement of boxes and skids permits tiering and stacking to meet your individual requirements. Provides quick availability, easy handling, or storage for complete units or parts.

Each of the units illustrated has an important use in modern industry. Ironbound skid platforms and box tops are prime sources of increased plant capacity so vitally needed today. Our representative can help you to increase your output and plant space. Catalog GP-7 may help you, too!



IRONBOUND

BOX & LUMBER COMPANY

Materials Handling Division

30 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

Circle No. 30 on Reader Service Card for more information

FLOW • MARCH, 1953

Conveyor Belt Fastener

The Turtle conveyor belt fastener, manufactured by Flexible Steel Lacing Company, is available in steel, monel, stainless and everdur. A mechanic's hammer is all that is required to apply this fastener, and no special machinery or equipment is required. One plate length

of three teeth on each side, two long and one short, permits the minimum number of plates to be used with maximum strength. The Turtle is made for repairing rips in belts 3/8 inch to 9/16 inch thick and for joining medium duty conveyor belts 7/16 inch to 9/16 inch thick.

Circle No. 204 on Reader Service Card

Carboy Dumper

For use with hoists or overhead conveyors, a carboy dumper that permits quick, safe handling of acids is manufactured by General Scientific



TRUCKS AND TRAILERS MOVE FASTER, EASIER ON NEW WHEELS BY

ELECTRIC

Modernize baggage-trucks, industrial trailers, floor trucks, mail carts and other portable equipment with new ELECTRIC wheels for faster, easier handling. There is an ELECTRIC wheel for every job.

Our 65 years of engineering "know-how" assures you of top performance from ELECTRIC equipment.

ELECTRIC wheels are furnished with or without roller bearings to fit your own axles or complete with axles—steel tires, molded-on-tires, or pneumatic tires. All types are available in a full range of sizes.

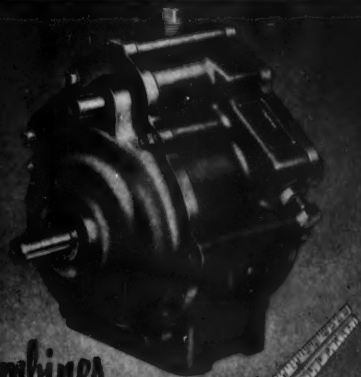
Our experienced engineers are always at your service.

WRITE FOR COMPLETE INFORMATION
ELECTRIC WHEEL CO.
2821 SPRUCE - QUINCY, ILLINOIS

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FLOW • MARCH, 1953

New! 4 in 1

REVERSING TRANSMISSION



Combines

- FORWARD
- NEUTRAL
- REVERSE and
- REDUCTION

**in a single unit for quick,
smooth reversing under full load**

This remarkable new type of reversing transmission—by one of the world's most famous gear makers—offers the design engineer a wider latitude in transmission performance, as well as new economies in materials and assembly, heretofore unavailable with ordinary transmissions. Its application is practically unlimited, thereby increasing the versatility of the equipment in which it is installed—particularly in materials handling equipment, farm implements and construction machines. There's no doubt about it. You can't afford to overlook these exclusive S-N features and savings. You can use them and so can your customers!



Our 50 years of specialized knowledge and experience as gear designers and manufacturers is at your service. Why not let us help you with your problems? Write today for our new Model S108 folder or specify your needs, stating application, input and output speeds desired, H.P., power source, equipment to be driven.

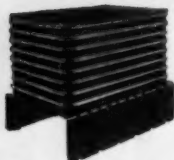
SNOW-NABSTEDT

Transmission Engineers
FOR NEARLY HALF A CENTURY

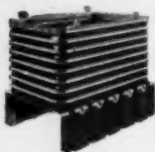


INDUSTRIAL DIVISION
THE SNOW-NABSTEDT GEAR CORP., HAMDEN, CONN.

Circle No. 48 on Reader Service Card for more information



Type PB-120 steel box and skid platform unit.



Type PB-120T box and platform unit with tiering lugs.

Old Friends...

But a

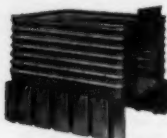
NEW
Name!

Now...
Specify

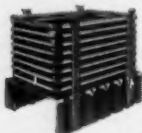
Republic STEEL BOXES AND SKIDS



Type P-1 skid platform in your choice of standard widths, lengths and clearance heights.



Type PB-650 box and platform unit with sliding end door.

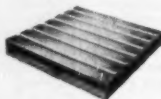


Type PB-120-L box and platform unit with full length lifting lugs.



Type B-80C box unit equipped for crane handling; corrugated bottom.

• You've known and used them for years. You've learned to prefer them for their enduring strength and rigidity in all types of load-bearing and load-carrying service. Now they come to you with a new name . . . "Republic". Simply substitute this famous name for the former "Truscon" name when specifying and ordering. Write for illustrated literature describing the complete line of Republic Steel Boxes and Skids available for use with trucks, crane, or hand-operated units.



Double-Face Steel Pallets provide rigidity and strength with minimum weight; no sharp edges; economical; three types.



All Republic Steel Boxes, Skids and Pallets fully described in illustrated booklet. Write us.



PRESSED STEEL DIVISION
REPUBLIC STEEL CORPORATION
1100 FRANKLIN AVE. • CLEVELAND 27, OHIO

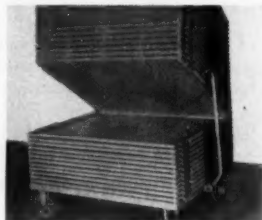
Circle No. 138 on Reader Service Card for more information

Equipment Company. This dumper can be attached to any overhead hoist for dumping, moving, storing, loading, filling and general handling. The carboy can be tilted to any angle and locked in position to assure steady pouring.

Circle No. 207 on Reader Service Card

Spring Leaf Truck

Useful for handling between operations, this multi-tier spring leaf truck is said to be highly effective where materials should not make contact with each other. The base is of heavy steel channel stock. Tiers are individually hinged to the upright frame. Each leaf may be locked in semi-up position by two coil springs, one on a side. Welded steel casters insure mobility, while skid base types are available if preferred. The units are moved by hand or by lift truck, and can be made in any size with any desired spacing between tiers. Manufacturer is Rack Engineering Company.

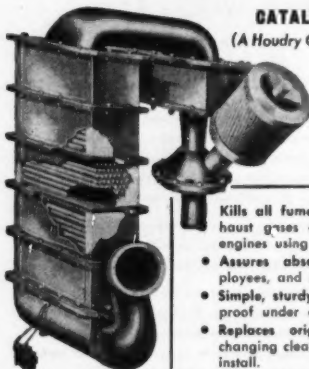


Circle No. 208 on Reader Service Card

DEATH TO CARBON MONOXIDE, EXHAUST FUMES AND ODORS

CATALYTIC EXHAUST
(A Houdry Catalyst Development)

Reduces CO
to a safe level



Kills all fumes and odors from exhaust gases of internal combustion engines using white gasoline.

- Assures absolute safety for employees, and increases efficiency.
- Simple, sturdy construction, rupture-proof under explosion.
- Replaces original muffler without changing clearances . . . and easy to install.
- Gives 2,000-2,500 trouble-free hours of operation, after which catalyst is quickly replaceable . . . and at low cost.
- Tested and listed by Underwriters Laboratories, Inc., and used in many of the nation's leading industrial plants.

OXY-CATALYST, INC.
Wayne, Pa.

Air Pollution Control
Power and Energy
Waste Heat Recovery

WRITE FOR FULL DETAILS AND SPECIFICATIONS
and mention this magazine

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FLOW • MARCH, 1953

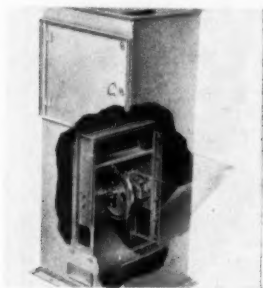
Televoice System

Thomas A. Edison, Inc., has introduced its Industrial Televoice System. Described as a "fact-conveyor", the system deals with the conversion of spoken thoughts into written communication by means of a series of special dispatching phones connected to a central recorder.

Circle No. 209 on Reader Service Card

Automatic Take-Up and Boot

A long-life, maintenance-free automatic take-up and watertight bucket elevator boot has been introduced by Beaumont Birch Company. The automatic take-up is designed and built to operate for years without any adjustment, lubrication or maintenance other than removal of links from the elevator chain to compensate for wear, stretch or elongation. Features of



Circle No. 44 on Reader Service Card for more information

DON'T
BE half SAFE*
USE "George"
AND BE
TOTE/ly SAFE

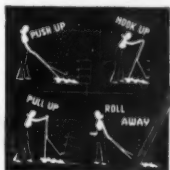


"George," the almost automatic TOTE BOX ROLLER TRUCK... with upper loading rollers and lower traction rollers... is the safest truck for metal working plants.

You load boxes by safe handle leverage... not by dangerous lifting. Load held safely... no slide-off danger. Brilliant paint color prevents tripping. Low, safe rollers... no skidding wheels. All-metal, long life, low cost. Buy "George", by George, and you've made a good investment.

*With apologies to you-know-who

3RG52



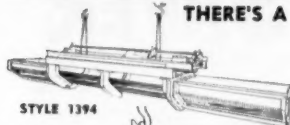
LET "George" DO IT

Write for free Folder &
ROLOCK Incorporated
Fairfield, Connecticut

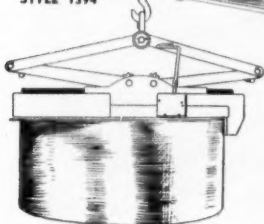
MANSAYER GRABS®

STORE MORE IN THE SAME SPACE
DUE TO THE LITTLE HEAD ROOM NEEDED

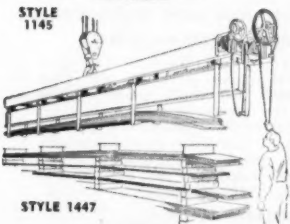
THERE'S A MANSAYER FOR YOUR INDUSTRY



STYLE 1394



STYLE 1145



STYLE 1447

STYLE 1394—Removes bar stock, tubes or extrusions from fixed racks and transports them to similar racks for further operations. An example of its use is that of handling material from storage to screw machines.

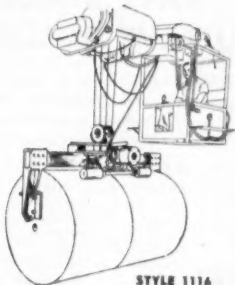
STYLE 1145—Handles coils by rim gripping. It is furnished in two styles, single or double acting, depending on conditions. Fully automatic cam mechanism shown in foreground.

STYLE 1447—For picking up long slabs of various widths and lengths. Adjusted for width by Mansaver telescopic arrangement and center chain wheel. Supporting legs are then rotated through 90° by small chain wheel, affording minimum aisle space with maximum support for slab.

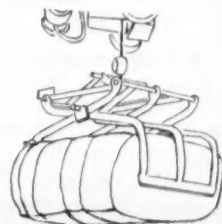
STYLE 1116—Rolls of varying width are handled simply, by means of this Mansaver Motor-Driven Grab with a short frame and sliding legs which telescope into it and afford minimum clearance requirements. Operated from cab without floor man.

STYLE 1007—This multiple-leg Mansaver Grab is used mainly for waste paper and other loosely baled material. It distributes the gripping action over a large area, permitting the handling of loose or wet bales.

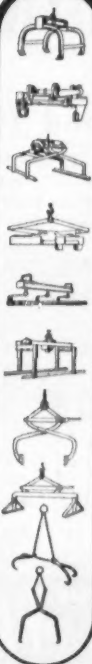
Write for Complete Catalog



STYLE 1116



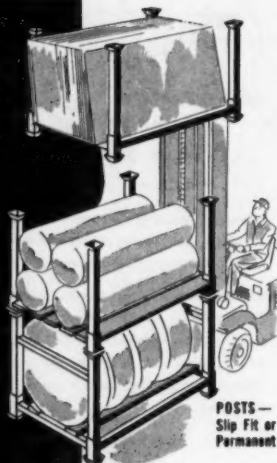
STYLE 1007



★ MANSAYER INDUSTRIES, INC. • 3103 EAST ST., NEW HAVEN, CONN ★

Circle No. 34 on Reader Service Card for more information

**75%
more
storage
in many
areas
using**



POSTS —
Slip Fit or
Permanent

Paltier
"TIERS OF RACKS"

PYRAMID RACKS

PATENTED

**SAVE SPACE . . .
and YOU SAVE DOLLARS!**

PALTIER PYRAMID RACKS are storing as much as 75% and more crushable, bulky and irregular shaped items in the same storage area — in industry after industry. They save their cost in no time at all.



A Paltier User Says:

"We are now able, in one operation, to load and unload various colors or styles of asphalt or asbestos shingles while under previous systems it sometimes required movement of five to eight stacks of material to obtain the pallet where the correct item was stacked"

— a real time saver!

Ask Us!

A Paltier storage engineer will be glad to show you how you can save storage space, too, with the Flexible Paltier System. Ask us, without obligation.

Write for 16-page Catalog

THE PALTIER CORPORATION
1709 KENTUCKY ST.
MICHIGAN CITY, IND.

Circle No. 122 on Reader Service Card for more information
154

the take-up and boot include: full floating, self-adjusting automatic take-up mechanism to maintain proper chain tension; double sealed roller bearings in dust-tight steel box; smooth rim traction wheel; gasketed watertight clean-out door.

Circle No. 210 on Reader Service Card

Solid Industrial Tire

A special compound of low-heat carbon black is incorporated in this industrial tire to afford less resistance and give increased physical and rolling properties. Manufactured by The Monarch Rubber Company, this solid tire is designed for electric power trucks. It is said that no extra power is needed as tires begin to wear, and reduced battery charging time is claimed. Thus, less truck hours are said to be lost due to battery charging, and material handling costs are correspondingly decreased.



Circle No. 211 on Reader Service Card

MAN SAVER



Sweeps up to 400% faster than costly pushbroom cleaning . . . saves money . . . saves manpower

A Parker Floor Sweeper saved \$2100 a year for a food manufacturer — \$520 a year for a lumber yard — 75% of all sweeping costs for a building material manufacturer. You, too, can save.

Sweeps all type floors. Collects and sweeps in one operation.

Easy to empty. A money-saver for any plant from small garage to large factory or warehouse.

Now available — information file containing time studies, case histories, and full details. Write, wire, or telephone today.

FACT FILE AVAILABLE

PARKER INDUSTRIAL FLOOR SWEEPER

PARKER SWEEPER CO., 73 Bechtel Ave., Springfield, Ohio

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FLOW • MARCH, 1953

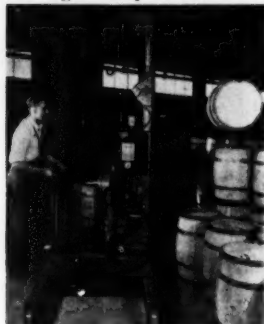
All-Purpose Conveyor

Sage Equipment Company makes a compact, all-purpose, portable "Pressparts" power driven conveyor for automatically moving stampings between progressive operations or for conveying scrap from press to tote boxes or conveyor belt. They are built in standard sizes.

Circle No. 213 on Reader Service Card

Portable Crane

Manufacturer of this electrically operated revolving base portable crane is Barrett-Cravens

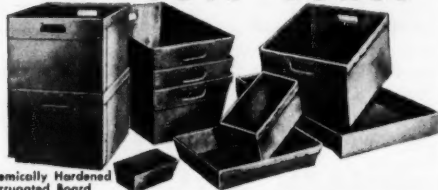


Company. It is equipped with anti-friction bearings, and carries its load and spots it where desired. Plain crane hooks are standard equipment, but special grapples for all requirements are available. Design

may be hinged or telescopic; operation manual or by electric power. Any required lifting height, fixed boom

FAMOUS
"CHEM-BOARD"

CONVOY TOTE BOXES



*Chemically Hardened
Corrugated Board

SOLD THROUGH LOCAL INDUSTRIAL DISTRIBUTORS

Cost—weigh—50% to 60% less than steel. A wide range of sizes in standard and custom made NESTING, STACKING, VERTICAL TOTE BOXES. Write for complete information, prices, name of distributor in your area.

CONVOY RECORD STORAGE FILES

Sold Only by YOUR LOCAL STATIONER

Used by most famous names in industry and businesses of all kinds. CONVOY "CHEM-BOARD" files for record storage made in letter, legal, and 12 other sizes. Stack to ceiling, mate together. Call your local stationer or write for name of stationer nearest to serve you.



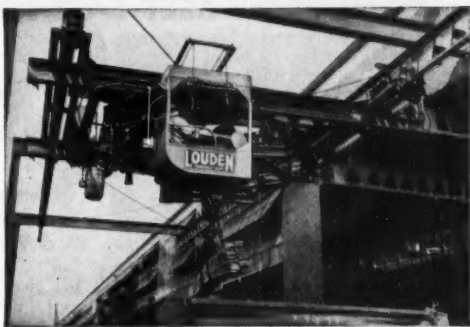
CONVOY, INC.

Canton 6, Ohio

P. O. Station B, 216-F

Circle No. 11 on Reader Service Card for more information
FLOW • MARCH, 1953

UNLOADING OR LOADING CARS WASTING YOUR MEN & MONEY?



Louden OVERHEAD HANDLING OFTEN
PAYS FOR ITSELF IN A FEW
MONTHS BY LETTING 2 OR 3 MEN DO WORK
OF A SLOW AND COSTLY "BULL GANG"

Getting things in and out of your plant a problem? Labor hard to find and hard to keep? Handling too slow; machines down time and again waiting for raw stock or parts? Labor costs and demurrage charges driving you mad? You need a Louden Crane like the one shown here . . . hundreds of plants have found them the perfect answer to their railroad siding problem. And many use them to load and unload open body trucks as well as gondola and flat cars.

Loading docks can be eliminated entirely because materials received can be moved directly to warehouse or start of fabrication on the overhead tracks, to any location inside building. Conversely, such a system can deliver finished products into waiting cars or trucks without intermediate handling. Length of runway can cover entire siding or truck lane, if desired. Design can meet any need for weight or bulk. Ask a Louden engineer about your problem. Wire or write now.



FREE ILLUSTRATED BOOK

Case histories telling how Louden Handling Systems have saved time and money for widely different kinds of industries are described and pictured in a new 56-page book called, "Economical Material Handling". Write for it.

THE LOUDEN MACHINERY COMPANY

7411 S. Court St., Fairfield, Iowa

Louden

OVERHEAD MATERIAL HANDLING

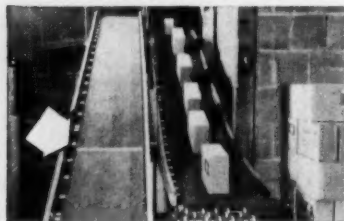
Circle No. 62 on Reader Service Card for more information

Circle No. 86 on Reader Service Card for more information

ALLIGATOR



CONVEYOR BELT LACING



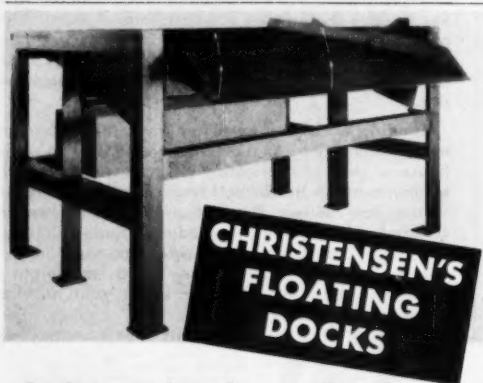
Every
Tooth
A Vise*

in Long Continuous Lengths for Conveyor Belts

- ★ Excellent for Package Conveyors, Portable Loaders, Trenching and Ditching Machines, etc.
- ★ In canneries where corrosion or rust is a problem specify Alligator made of Stainless or Monel.
- ★ For magnetic separators or anti-sparking specify Alligator made of Everdur.
- ★ Separable and smooth on both sides.
- ★ 12 sizes. For belts from 1/16" to 5/8" thick—and any width.

Order from Your Supply House. Ask for Bulletin A-60.
FLEXIBLE STEEL LACING CO. 4702 Lexington St., Chicago 44, Ill.

JUST A HAMMER TO APPLY IT



help you load or unload faster, easier, at lower cost

This inexpensive, self-contained unit with a capacity of 15,000 lbs., is designed for maximum safety and operating efficiency. Its up and down movement is controlled by a concrete counter balance to relieve the weight of the plate. Models are 6' x 6' and 6' x 8', include a self-contained unit which can be placed in front of the dock, and a basic model, which is less expensive, which can be placed in the dock utilizing the dock for support.

Write Today for Details of the Complete Line of Loading Ramps

Wm. Christensen Co., Inc.

DEPT. F-53 • YORK, PENNSYLVANIA

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156

or revolving base of any practical length, and many required special features are available. Capacities range from 500 to 5000 pounds.

Circle No. 214 on Reader Service Card

Rider-Type Straddle Truck

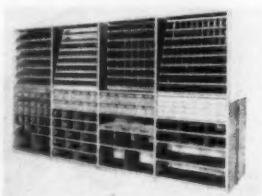
Shown here is a rider-type, electrically-powered fork lift straddle truck which has been designed by Yale & Towne Manufacturing Company. Called the Yale "Warehouser", it is short in length, light in weight, and is designed for right-angle tiering in 5 to 6 foot aisles, and for operating in elevators and on flooring that will not sustain heavier trucks. The truck features three speeds forward and three speeds reverse, with time-delay controls between speeds for smooth acceleration. Available in 2000 and 3000 pound models, it can lift loads as high as 133 inches to maximum use of air-rights.



Circle No. 215 on Reader Service Card

Tool Crib Installations

Illustrated is an installation which demonstrates a variety of Lyon inserts that can be placed in Lyon steel shelving for tool crib arrangements. Different types of inserts can be used, depending upon various requirements, for storage of drills, reamers, taps, milling cutters or other tools. Manufactured by Lyon Metal Products, Inc., these inserts are said to fit all tool crib requirements. Each shelf is equipped with labelholders.



Circle No. 198 on Reader Service Card

Road Truck Tire

A truck tire, known as the U. S. Royal Fleetway, has been designed by United States Rubber Company. It has been designed to reduce road failures and to give up to 41% more original tread miles. It is said to reduce groove cracking by a process of exposure to intense and penetrating infra-red rays.

Circle No. 197 on Reader Service Card

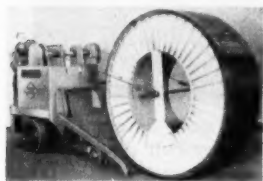
Poly-Vinyl Conveyor Belt

A conveyor belt with a dirt and abrasion resistant Poly-Vinyl coating is manufactured by Main Belting Company. While the surface of the belt is dense, the belt is flexible and is said to provide assurance for long service. It is recommended for service where cleanliness is essential.

Circle No. 216 on Reader Service Card

Reel-Handling Truck

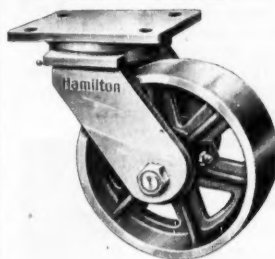
Designed for handling large reels up to 96 inches in diameter and weighing up to 20,000 pounds, this electric-powered platform truck is equipped with a rocking platform and a powered winch. Manufactured by The Elwell-Parker Electric Company, the truck is available with either power or hand-wheel steer. The size of the platform and



the wheel base may be varied depending on the size of the reel handled. To load reels, dual cables from the winch are attached to the pin running through the center of the reel. The winch pulls

the wheel base may be varied depending on the size of the reel handled. To load reels, dual cables from the winch are attached to the pin running through the center of the reel. The winch pulls

Hamilton "AIR-FLO" CASTER



Especially
Designed
for Handling
**HEAVY
LOADS**
Easy Rolling -

Powerful - Unbreakable

The "Air-Flo" Heavy Duty Caster is just one of the many styles and sizes made by Hamilton. The large line includes casters for almost every industrial purpose—swivel and rigid, single and double-wheel, all-metal, rubber-tired or molded plastic. If you are not using Hamilton Casters, get acquainted with their expert design and smooth, trouble-free performance. Prices are right, and satisfaction is guaranteed by our manufacturing experience of 45 years.

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THE HAMILTON CASTER & MFG. CO.
1672 Dixie Highway Hamilton, Ohio

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FLOW • MARCH, 1953

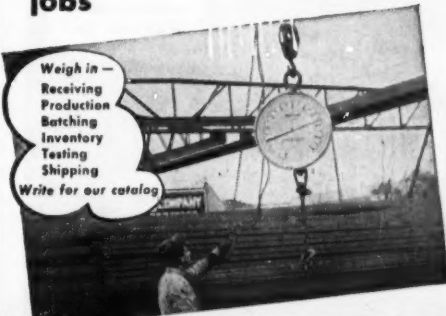
How much do you weigh?

Not you, but your products! Do you weigh in receiving, at production stages, etc. to protect your operation against overcharges, losses, miscalculations? **HYDROSCALE**, the hydraulic crane scale, makes it practical to check whenever and wherever you should, weighs on the spot, eliminates weighing stations and man power and equipment tie-ups.

36 MODELS,
500 to
200,000
LBS.

HYDROSCALE

reduces the
effort and
expense
associated with
routine weighing
jobs



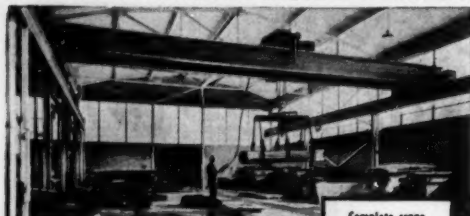
Weigh in —
Receiving
Production
Batching
Inventory
Testing
Shipping
Write for our catalog

HYDROWAY SCALES, INC.

20428 W. 8 Mile Rd., P.O. Box 4754 Detroit 19, Mich.

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Circle No. 2 on Reader Service Card for more information



Repeat Installations are MANY!

When a business grows, it is natural to specify more of the equipment that has served well and contributed to that growth. This is the reason why expansion plans of so many firms include Abell-Howe Cranes, ordered again and again by previous users on the strength of thoroughly satisfactory past performance... For economical and truly serviceable overhead handling equipment, large or small, you cannot buy better.

Complete crane installations
Job Engineered
and manufactured by
ABELL-HOWE
are certain to
SATISFY...
INVESTMENTWISE
and
PERFORMANCEWISE

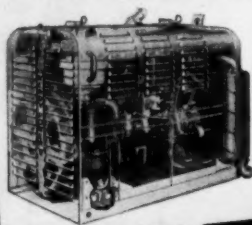
The Abell-Howe line includes a wide range of motorized and hand operated cranes, runways, monorails, electric hoists, storage racks and accessories.

Your inquiries are invited. Ask for catalog C-120



ABELL-HOWE CO. 53 W JACKSON BLVD CHICAGO 4, ILLINOIS

READY-POWER Adds 'GUTS' to Electric Truck Performance



Only Ready-Power Drive gives electric industrial trucks the stamina that means full power all the time! Gas-electric and Diesel-electric models are available for all truck sizes.



Your Truck is no Better Than Its Power.

The READY-POWER Co.

3838 Grand River Ave., Detroit 8, Michigan
Manufacturers of Gas and Diesel Engine-Driven Generators and Air Conditioning Units; Gas and Diesel-Electric Power Units for Industrial Trucks

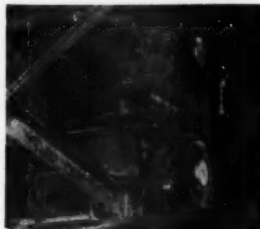
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158

the reel onto the rocking platform, and as the roll strikes a horizontal bar located in front of the battery compartment, power to the winch is automatically cut off.

Circle No. 217 on Reader Service Card

Compact Speed Reducer

Shown here mounted on a screw conveyor, the No. 120 "Shaft-King" speed-reduction drive has an overall height of 11 3/4 inches and overall width of 9 3/16 inches from output hub to end of input shaft. Manufactured by The American Pulley Company, the speed reducer has a 20 to 1 ratio, thus further saving space by permitting smaller sheaves and a shorter belt center than would be possible with a lower ratio unit. A 6.2 inch sheave is used on the motor and a 8.6 inch sheave on the reducer. Motor speed is 1750 RPM, driven speed 63 RPM. The speed reducer is used with a standard motor.



Circle No. 218 on Reader Service Card

Conveyors Overhead take traffic from floors!

Up, across, over, down—in the modern Sunbeam plant packaged merchandise flows from production lines to freight cars, shipping rooms and warehouses on OLSON CONVEYORS. Keeps merchandise flowing. Avoids accumulation. Conserves space. Saves laborious trucking. Keeps floors free of trucks.

Just one of thousands of places where Conveyor Systems designed, made and installed by OLSON get the job done FAST with tremendous savings.



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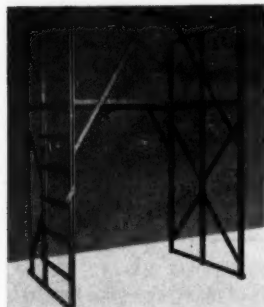
One of several OLSON Push Bar Conveyors in the Sunbeam plant that takes cartons from packing machines and benches up to the overhead belt conveyor system.

SAMUEL OLSON MFG. CO., INC.
2426 Bloomingdale Ave., Chicago 47, Ill.

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FLOW • MARCH, 1953

Steel Framing Material

Called Mult-A-Frame, this steel framing material consists of three basic units with which equipment can be built for present needs that can at any time be dismantled, adapted or converted without scraping to meet new and different uses. There is no nailing, drilling or welding. Standard lengths are cut with a saw and assembled with a wrench. The three basic units are: channel frame, spring T-bolts and safe-locking fittings. It's manufactured by Mult-A-Frame Division of Ainsworth Manufacturing Corp.



Circle No. 221 on Reader Service Card

Stock Picker Truck

The Rol-Away Truck Company makes this line of stock picker trucks. They are specially designed for filling orders or stocking shelves with small parts or packages. Of aluminum construction, they have a patented step ladder on one end which works on a spring principle, sliding down and making a firm brace for the truck. The line includes five models: two sizes with one step ladder, two sizes with two step ladder and one model with a three step ladder.



Circle No. 206 on Reader Service Card

Air Hoist

An air hoist manufactured by Marton Air Equipment Ltd. comes in capacities from: 120 to 1000 pounds. Normal air pressure is 80 pounds, maximum 100 pounds. Check valves control the maximum speed and prevent the load from dropping if the air supply fails or the hose is disconnected.

Circle No. 212 on Reader Service Card

DON'T FORGET!

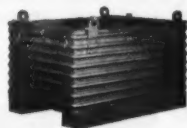
You can get complete information on all New Equipment if you use the Reader's Service Card



**Bigged BRUSCO
handling equipment
increases efficiency**

No. 558 BRUSCO CORRUGATED STEEL BOXES

Save floor space — stack safely from floor to roof. Four way entry for fast, efficient handling. Equipped with crane lugs for movement by crane. Fabricated from heavy gauge corrugated steel to give added rigidity and maximum strength. Thoroughly and securely arc welded for longer, maintenance free life. Made in various sizes and load capacities to suit your requirements.



No. 559 BRUSCO CORRUGATED SKID BOX

Saves valuable floor space and speeds production. Made in all sizes and various gauges of steel to fit any load capacity. Stack from floor to roof.



No. 1210 BRUSCO SELF DUMPING HOPPER

Speeds production and saves labor in handling parts and materials in your plant. Easy to move and simple to operate. Hopper is fabricated of heavy steel plate thoroughly reinforced. This unit is equipped with a new, cast steel rocker and hardened pins for longer service. Made in ½, 1, 1½ and 2 cubic yard capacities. Underclearance optional.



Write today for new Bulletin No. 500 presenting the most complete line of Part Boxes and Brusco Self Dumping Hoppers on the market.

Brusco

HANDLING EQUIPMENT

BRUMMELER STEEL PRODUCTS CORPORATION

1410 Ionia Ave., S. W. Grand Rapids, Michigan

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RAZORBACK PALLET

For the best in hardwood pallets at lowest prices consistent with quality, always order RAZORBACK Brand! They will prove their worth in service through longer life and lower maintenance cost. These pallets are now available in bolted designs.

Arkansas Pallet Co.
P. O. Box 794-A Phone 6474
PINE BLUFF, ARKANSAS



Classified Advertisement Section

USED EQUIPMENT — MEN — JOBS — LINES

Rates: for "Positions Wanted" \$8.00 minimum, limit 25 words. For all other classifications \$10.00 minimum for 25 words; each additional word 25c. Boldface type or all caps, \$12.00 minimum for 25 words, each additional word 35c. Box address counts as five words. All insertions payable in advance.

HELP WANTED

Storeroom Manager, manufacturing company located in central Ohio. Desire experienced man to take charge of storerooms and warehouses. Must know good stockroom practice and material handling. Reply in detail stating age and experience. Replies held in strict confidence. Write FLOW, Box 3153.

FOR SALE

Yale & Towne Worksaver 4,000 lb. capacity electric platform truck, w/ battery and charger. 100-32 x 60 x 7 1/2 platforms. 2—Barret-Cravens hydraulic hand lift trucks. Excellent condition. Nesbitt Bottling Co., 900 North Nelson Rd., Columbus 3, Ohio.

Three new 100-foot chain type conveyors with variable speed reducers mounted on channel iron legs available at half price. QUAKER STRETCHER COMPANY, Kenosha, Wisconsin.

THIS IS NO BULL—thousands of readers use the Reader Service Card bound into each issue to obtain complete details about handling equipment listed in the ads, New Products and Useful Literature Departments. Just circle the corresponding number that appears below all items on the card, fill in your name and address and drop it in the nearest mail box—we pay the postage. And of course there is no obligation.

NEW Clark TUFF BOY FEATURES UNI-WELD, STAKE POCKETS with Rounded Corners!

High-pressure grease fittings

Ball, roller, or tapered roller bearing wheels

All type wheel treads available

E-Z rolling

Selected hardwood renewable decks

All capacities available

All types superstructures available

Rounded corners; no sharp edges

Lightweight

Available for every purpose

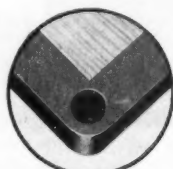
Double steel angle frame construction

Rugged

Tilt and non-tilt types

Flush deck
Heavy-duty
All joints electric arc welded; no bolts, no trouble

Fabricated unbreakable wheels



Safety, smoothness, and durability assured by this integrally welded, unified frame and stake pocket. Steel more than 5/16 inch thick.

Introduces New INTEGRATED line of wheeled equipment

The Clark TUFF BOY is more than a great new floor truck. It's an entirely new idea—the first of a line of integrated wheeled equipment... integrated because it is available with all types of chassis, wheels, casters, and combinations, and with all types of superstructures, all designed to be used with any other TUFF BOY. Result: Better equipment at lower cost. The greatest value you've ever seen.

Clark



ALL STEEL WELDED TRUCK CO.



ROCKFORD, ILLINOIS

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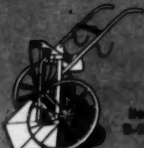
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WELDER'S
TRUCK



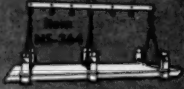
BARREL and
BOX SKID

CONSULT

PS

FOR THE BEST

Materials Handling Equipment



SHEET STEEL
GRAB

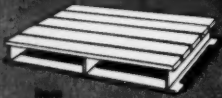
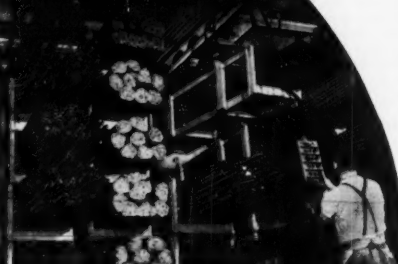


Vertical DRUM LIFTER

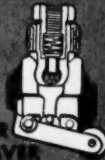
For handling open and closed steel drums in vertical position, by crane or hoist. All-steel, with heavily welded chain. Sure-hold safety barrel grip. Saves plant space. Use for either high or low ceiling condition.

PORTABLE
Heavy Duty
BAR RACKS
Any Rack Easily Accessible

Item C-497



All metal
PALLET

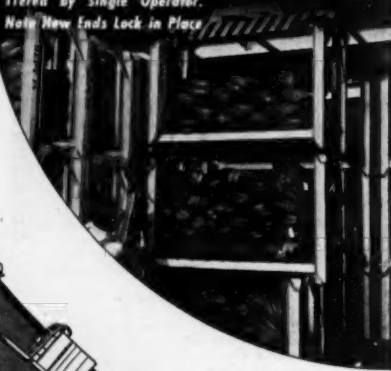


AIR
SAVER
leak proof
AIR VALVE

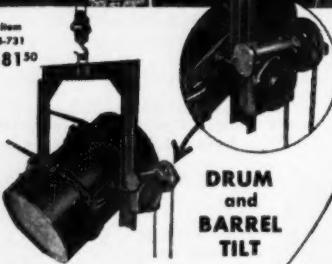
STACKING RACK

Tiered by Single Operator.
Note: New Ends Lock in Place

Item C-498



Item
S-731
\$181.30



DRUM
and
BARREL
TILT

A barrel tilt for controlled, precision dumping or pouring. Ideal for chemicals, solvents, powders, etc. Turns 360° through worm drive. Equipped with two safety type locking devices and all-steel, welded yoke. Hand-operated chain drive.



WOOD BOX
metal bound



Automatic
END DUMP



Industrial
DUST PAN



All-Steel
STOCK RACK



UTILITIES RACK
on wheels



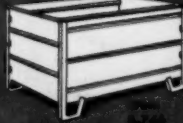
Sloped Bottom
BOX and STAND



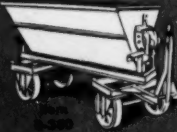
BARREL TRUCK
loads automatically



MULTI-PURPOSE
CART



CORRUGATED BOX
with legs



TRAILER TRUCK
side dump

WHEN ORDERING

always give ALL PRICES

DESIGNED AND MANUFACTURED BY

Palmer Shile Co.

16012 FULLERTON AVE., DETROIT 27, MICH.

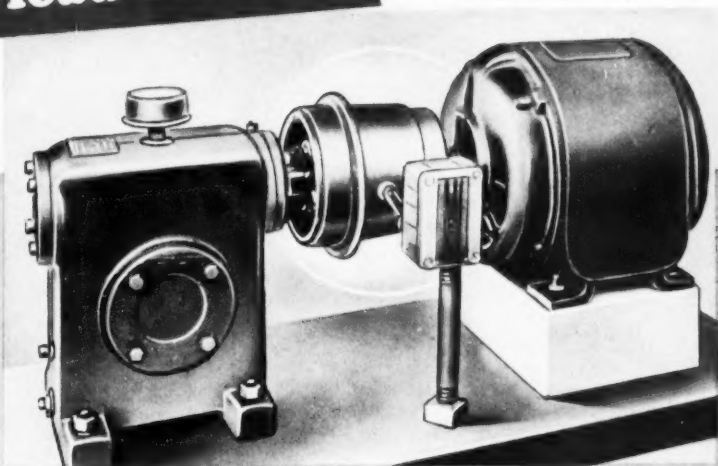
Save Cost of Down-Time

Anchor-Waldron Automatic Overload Cut-Out



Flexible Coupling Type For
Direct Connected Drives

Pulley Type For Belt and
Chain Drives



**automatically shuts off motive power . . .
resumes operation with push of a button**

These automatic mechanical units make use of increasing torque to control the operation of machinery. They protect horsepower and save the time losses caused by sheared drive pins. Siren or light signals can be installed to give ample

warning of a build-up in load. Wherever continuous operation of conveyors is essential, the positive overload protection afforded by the Anchor-Waldron automatic cut-out can prove a paying investment.

Our new Catalog No. 51 gives full information, sizes, ratings and other engineering data on both coupling and pulley types. Write for your copy.

JOHN WALDRON CORPORATION

Waldron Series "A" and Junior Gear Couplings

Francke Pin Type Coupling

Anchor-Waldron Overload Cut-Outs

NEW BRUNSWICK • NEW JERSEY

Sales Representatives In Principal Cities • In Canada—Peacock Brothers, Ltd.

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men over 45

More than six times as many men of your age will die of lung cancer this year as died in 1933, according to official reports. Though our research scientists are making every effort to discover the reason for this increase, they still don't know the answer.

They *do* know, however, that the lives of over half of those who will develop lung cancer *can* be saved . . . if they get proper treatment while the disease is still in the silent stage, before any symptoms have appeared.

That is why we urge you to have a chest X-ray every six months when you have your regular health check-up . . . no matter how well you may *feel*. Since only an X-ray can detect the "silent shadow" in its earliest stages, it is your best insurance against death from lung cancer.

For more detailed information about this or any other form of cancer, call our nearest office or simply address your letter to "Cancer" in care of your local Post Office.

American Cancer Society



FLOW Magazine